THE CHICAGO

MEDICAL JOURNAL AND EXAMINER.

VOL. LIV. MAY, 1887. No. 5

ORIGINAL COMMUNICATIONS.

THE WARMING-CRIB.

BY JOHN BARTLETT, M. D., PROFESSOR OF DISEASES OF WOMEN AND CHILDREN AT THE CHICAGO POLICLINIC.

[Read before the Chicago Medical Society, May 2nd, 1887.]

While probably for ages it has been the custom on the part of the attendants of women in confinement to secure additional warmth to immature or feeble children, the plan of placing them in a receptacle convenient for maintaining a constant elevated temperature is not common. Such an arrangement, we are told, has long been used at Moscow. Denucé described an incubator in 1857; Credé has used one for a score of years; and, of late, the somewhat complicated incubator of Tarnier has come prominently into notice.

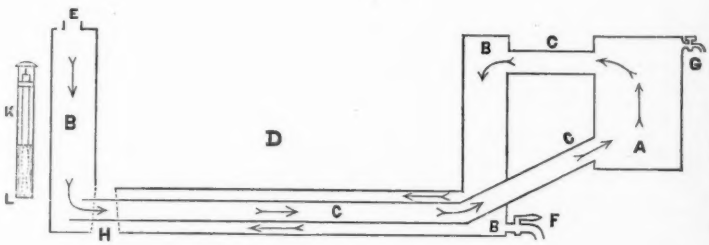
Recently, having urgent occasion to use one of these warming cribs I was called upon to give directions for the manufacture of it. In the literature accessible I found no details sufficient to guide the mechanic, and I was forced to guess at the dimensions of the various parts of the apparatus. With this experience of the need of proper

directions for the making of a suitable cradle, I have deemed it worth while to exhibit one of these useful appliances, and, what is of more importance, to furnish a diagram of one, with measurements, from which an apparatus that will answer all expectations may be constructed by any intelligent artisan.

Credé's cradle consists of two small bathing-tubs placed one within the other, with a water-space between them. It is used by filling the interspace with water at 122 degrees. In four hours this water is withdrawn and the space again filled with a new supply, or the cooling water can be withdrawn by degrees and hot water added as needed. In Tarnier's apparatus, the child, in a cradle-frame, is enclosed in a duly ventilated case made partly of glass; beneath this is a tank of water provided with a boiler and thermosyphon, kept warm by means of a lamp. It is necessary to keep the lamp lighted for a number of hours, and then to discontinue its use for a time, lest the incubator become too hot. Tarnier has modified the apparatus for use in private practice by dispensing with the lamp and replacing the large hot-water tank with a number of smaller flasks. It is necessary to empty and refill one of these every half hour in order to maintain the proper temperature in the cradle-space. It will be seen that each of these three varieties requires a good deal of watchfulness and care.

The crude warming-crib which I present this evening is simple, efficient, safe and, perfectly easy of management. It consists, as you see, of an outer case of galvanized iron, or preferably of copper, and an inner smaller one. Between the two cases is the water area, closed in all around. Standing off some inches from the outer box will be no-

ticed a small boiler connected by tubes with the water-space. The upper of these tubes terminates immediately after entering the water-area. The lower one extends through the lower portion of the water-space, to end near the opposite side of the box. This arrangement is necessary in order to form an effective thermo-syphon by means of which circulation of the water in the water-space may be maintained, and thus an equable temperature of all parts of the crib secured.



WARMING CRIB.

A—boiler; B—water-space; CC—thermo-syphon tubes; D—cradle-space; E—inlet; F—outlet; G—water-gauge; H—safety-vent; K—thermometer-frame, with cup at "L".

MEASUREMENTS FOR SMALLER CRIB RECOMMENDED.

Outside measurement of crib (the figures have reference to the metal case), 26x26 inches; outside depth, 11½ inches; size of cradle-space, 21x21 inches; depth of cradle-space, 9 inches; width of water-space, 2½ inches; boiler, 5 inches in diameter, and 7⅝ inches long. Pipes, 1⅛ inches in diameter. Safety-vent, 1⅛ inches at top; at bottom, 1⅝ inches. Capacity of water space, 12 gallons. Distance of the boiler from the crib wall, 5 inches.

MEASUREMENTS OF THE LARGER CRIB EXHIBITED.

Outside measurement, 30x32 inches; outside depth, 14 inches; size of cradle-space, 22x24 inches; depth of cradle-space, 10 inches; width of water-space, 4 inches. Boiler, 5 inches in diameter, and 9½ inches long. Pipes, 1¼ inches in diameter. Safety-vent, 1¼ inches at the top; at bottom 1⅞ inches. Capacity of water-space, 30 gallons. Distance of the boiler from the crib wall, 5 inches.

NOTE.—In arranging the bottom board and castors the carpenter should see to it, that the boiler stands at the proper height to accommodate the lamp to be used. The "Florence Lamp" renders good service.

Leakage into the cradle-space, occurring unobserved, might prove fatal to the occupant. To anticipate such an accident a safety vent is provided. A conical tube is set, with the larger orifice downward, in the bottom of the crib-space. To prevent the ingress of cold air it is packed lightly with absorbent cotton. In the event of water finding its way into the cradle-space it would run into the vent, wet the cotton, and cause it to fall out of the tube, leaving this free to act as a drain.

One of the necessary attachments to such an apparatus is what may be called a thermometer frame. The determining of the temperature of the water by the thermometer, without this peculiar attachment, is very unsatisfactory. The column of mercury falls so rapidly upon removing the instrument from the water that it is impossible in this way to read the temperature accurately. To obviate this difficulty, the expedient has been resorted to of placing the thermometer in a frame-work of metal, so that the bulb and lower part of the stem of the instrument rest in a cup. When the frame and thermometer are removed, the hot water brought up in the cup causes the mercury to retain its level, so that this may be noted at leisure.

It is desirable to encase the metal box with wood, both that the heat may be better retained, and that additional strength be secured. The metal walls are not strong enough properly to sustain the pressure of a column of water ten inches high. They bulge in all directions, indicating considerable strain at their seams. The upward pressure on the bottom of the cradle-space in this incubator is 200 pounds. The outer bottom and sides are therefore sustained by boards, and pressure upward upon the cradle-space bottom is opposed by wooden standards, resting upon the ends of cross strips fitted to this

bottom and held down by slats crossing from side to side over the top of the box.

To use the apparatus, the water-space is filled with warm water, preferably by means of rubber tubing, and the lamp lighted. The water is never changed, and no attention is required further than to so adjust the wick of the lamp as to maintain the bed of the infant at the temperature desired. With a little practice the flame of the lamp can be so adjusted by the eye, and the temperature of the incubator-wall so estimated by the hand, that it will hardly be found necessary to consult the thermometer. A given temperature of the infant's bed may be maintained within a few degrees with very little trouble. The volume of water is so large that variations of temperature of the room, or in the amount of heat applied, are slow to induce a change in the temperature of the bed. In this one a temperature of 92 degrees was generally maintained. It varied between 92 and 86 degrees. It was gradually allowed to fall to the latter point during a number of days preceding the final removal of the infant from the cradle. A temperature of 122 degrees in the water indicated 92 degrees in the bed; the air of the room being at 70 degrees. The gas stove or lamp used under the boiler should be capable of furnishing an abundance of heat; for the large crib here shown a coal-oil lamp with a four-inch wick was amply sufficient. It is convenient to have two of these lamps, so that one may be always ready when needed. The bed is probably best made of horse-hair or cotton; it fills up about one-half of the cradle-space. The babe, dressed as usual, is covered by a woolen cloth, and over this rests a blanket sufficiently large to cover the whole top of the incubator, and thus to roof in the cradle-space, except about the face of the infant.

The incubator may be emptied of water by means of tubing

attached to the discharge-cock. The crib here presented has disadvantages. Intended for triplets, it is very capacious. Its water-space, with a capacity of 30 gallons, is probably unnecessarily large. This renders it difficult to be filled and emptied, and cumbersome to be moved. Probably one of considerably smaller dimensions would be preferable. To the wood-cut prepared to accompany this paper, as published, are appended dimensions for a crib of, as is supposed, a more desirable size.

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EDITORIAL.

IN another portion of this number of THE JOURNAL AND EXAMINER will be found an abstract of a series of articles by Dr. Ernst Brand of Stettin, Germany, upon the treatment of typhoid fever by means of cold baths. This so-called "method of Brand" became very popular, soon after the publication of the author's monograph upon the subject, but it has gradually fallen into disuse, having been displaced by the more convenient and less tiresome antipyretic method. The author reports 19,000 cases which he analyses, and claims that by a thorough and systematic use of his method the common percentage of mortality of from 16 to 20 may be reduced to from 4 to 8, and that even 4 is too high.

The following statement, which he makes, shows the author's faith in his method of treatment: "I do not say that every case of typhoid fever treated with water will recover, but I have said and I repeat, that every case in which the treatment according to the method of Brand is begun before the fifth day, and regularly and thoroughly carried out, will certainly recover."

The standing of the author, as well as the importance of the subject to those interested in internal medicine, render the topic worthy of careful attention.

FOREIGN CORRESPONDENCE.

ANNUAL MEETING OF THE ITALIAN SURGICAL SOCIETY.

CHIAVARI, ITALY, April 15th, 1887.

Special Correspondence of The Chicago Medical Journal and Examiner.

The fourth annual meeting of the Italian Surgical Society was held in Genoa on the 4th, 5th, 6th and 7th of this month. The meeting was largely attended; most of the prominent surgeons of the state were present. Every member reported his subject orally, saving, by so doing, a great deal of time. This enabled the members to get through a large amount of work, and devote more time to the discussions.

The meeting was opened by the President of the Executive Committee, Professor Durante, of Rome. He eulogized in a few well-chosen words the memory of the late Professor F. Margary, describing the progressive, loyal and sincere character of the deceased. He then presented the annual financial report of the society; after which he gave the chair to Professor Azzio Caselli, President of the Society, who welcomed in the name of Genoa the members present. The presentation and discussion of subjects were then proceeded with.

Professor Ceccherelli of Parma, who was announced to lead the discussion of post-operative fever, entertained the society instead on the operation of supra-pubic cystotomy for the relief of vesical tumors. He had performed this operation on a man 70 years old, for a malignant growth of the bladder, with success. He spoke at length on the

diagnosis of these cases, especially regarding hæmorrhage as a symptom.

Professor Novaro, of Siena, read a very interesting communication on an experimental operation performed in January on a dog, for the insertion of both ureters in the rectum. The operation was successful and the dog is now living and doing well. This operation was partially, and without good success, attempted by Gluck and Zeller of Berlin. Bardenhauer of Cologne succeeded with only one of the ureters. Professor Novaro thought that in cancerous tumors of the bladder the complete extirpation of the bladder ought to be performed in two operations, reserving the exportative for the last. Scooping such a fragile organ only resulted in harm; moreover, only arrested the hæmorrhage for a few days. The members applauded Professor Novaro for his successful result.

Professor Ruggi, of Bologna, entertained the society on several laparotomies performed last year with good success.

Dr. Lampugnani, of Turin, described a modification which he had adopted in the decapitation of the femur for the relief of congenital dislocation of the hip joint.

Professor Ceccherelli reported a number of experiments on the surgery of the stomach. He also related two cases of craniotomy for the relief of tumors.

Professor De Rossi, of Rome, reported several malignant tumors of the mastoid process. This communication gave rise to a lively discussion, in which Professors Bottini, Novaro, D'Antona, Durante and others joined.

Professor Paci, of Pisa, reported a total removal of the scapula and three partial ones.

Professor D'Antona, of Naples, reported several cases of

ascites treated with drainage. He also reported several laparotomies.

Professor Paci referred to an old traumatic iliac dislocation of the femur treated with the femoral decapitation.

Professor Durante spoke at length on tuberculosis and pseudo-tuberculosis of bones and synovial membranes. He called it an exaggeration to believe all chronic articular lesions tuberculosis. There are many inflammatory forms which may be mistaken for tubercular products. He presented a number of anatomical and clinical facts to prove his assertions.

Professor De Rossi called attention to the good results obtained by him in the treatment of osseous and articular tuberculosis with sea-baths. He showed photographs of many patients cured without operative procedures.

Professor Paci related the history of three cases of club feet. Two of these were cured with the removal of the astragalus, and the other with the resection of the nervous branches entangled in the ankle-joint from an epiphyseal separation.

Dr. Lampugnani spoke on the treatment of varus-equinus, and in particular on the extirpation of the astragalus. These subjects were discussed by Drs. Bottini, Novaro, Durante, Ceci, Postensky, D'Antona and others.

Dr. Tricomi, of Naples, made known his clinical and experimental researches on some suppurative processes. He had always found present the staphylococcus aureus, never the albus. Professor Ceci on the contrary had frequently seen the albus.

Dr. Tricomi also spoke on the antiseptic properties of iodol and iodoform. He had found iodol far superior as an antiseptic.

Professor Ruggi presented to the society a new cystotome. He had invented it for those who were not familiar with

lithotomy; with it they could operate without fear of failing. The ingenious instrument consisted of a staff, in which was concealed a trocar. The staff was introduced in the bladder, and by turning a screw the trocar could be made to cut from within outwards. The instrument was not favorably received by the members. Professor Novaro thought the instrument was too complicated. Our surgical instruments ought to be simplified. Such instruments as the one in question would spoil surgery.

Professor D'Antona said that lithotomy had now reached such perfection and facility that we ought to consider as superfluous any other new method of performing it. Professor Ruggi defended his cystotome. He had not invented it for teachers of surgery. He invited the members to the dead-house, where he would illustrate its working on the cadaver.

Professor Durante made a report of four cases in which he showed the utility of an artificial anus, as a preliminary treatment in cancerous condition of the rectum. He also reported a case in which he had ligated the innominate artery for the relief of a subclavian aneurism with perfect success. He had used catgut, to which he attributed a great share of his success. He said that this case was the nineteenth on record, and, with that of Dr. Smythe of New Orleans, the second successful one. The Professor was highly complimented by all present.

Professor Novaro reported a successful case of cholecystotomy—the first one on record in Italy. A patient, female, 43 years old, suffered several times from bilious colic. When brought to the hospital she was suffering with pain in the region of the liver, was feverish, jaundiced and suffered from vomiting. Bile feces were wanting. A tumor was detected over the liver, which was immediately diagnosed as an enlarged

gall bladder. On investigation pus, bile and mucus were obtained. The patient did not improve. The operation of cholecystotomy was decided upon. An incision was made over the tumor, the abdominal wall cut through, the gall bladder found, incised, and stitched to the sides of the external wound. A large stone was found lodged in the ductus, and was removed with great difficulty. The wound was dressed, but a fistulous opening remained, through which bile continued to be discharged. After three months, the fistula showed no tendency to heal, and the edges were touched with lunar caustic and made to granulate, and gradually it healed. The patient is now enjoying good health, and has had no sign of her former trouble.

Dr. Bonanno, of Rome, reported a case of an extra-uterine pregnancy, in which the sac and the fœtus were situated on the anterior portion of the body of the uterus. How the ovum got there he could not explain. The patient, in the sixth month of pregnancy, feeling no longer the movements of the fœtus, consulted him, and he, after a careful examination, made a diagnosis of death of the fœtus. He performed laparotomy, removed the dead fœtus and the sac, and the patient made a good recovery.

Professor Ferrari, of Parma, spoke on the ætiology of tetanus. From several experiments made in his clinic and laboratory he thought tetanus to be due to a specific microbe (a staphylococcus); he was continuing the experiments, and he would at the next annual meeting make known his final conclusions. Professors Ceci, Tricomi, Berti, and others discussed this subject.

Professor Caselli, of Genoa, spoke on the subject of tracheotomy, and showed some modifications which he had made in the instrument. He modified the tenaculum in

having it grooved on the convex side, so that, with the help of a grooved director, he could be enabled to quickly slide the tube on to the trachea. The quicker one can put the tube in the wind-pipe the better will be the result of the operation, for the secret of success lies in preventing any blood from entering the trachea. He produced statistics of 132 operations with 53 recoveries, while since his modification he has had 13 recoveries in 18 operations, a remarkably good showing. During the discussion I was very much surprised at not hearing any allusion made to the process of intubation of the larynx.

Professors Ruggi, Lampiasi, Rubino, Crespi-Morini, and D'Antona, each presented photographs of patients for whom they had performed Estländer's operation for the relief of empyæma.

Professor Ceci related a case in which he had trephined the skull of a patient brought to the hospital in a hemiplegic and comatose condition, resulting in complete recovery. He also related several successful plastic operations. He also showed to the society a patient from whom he had last year removed the spleen. She has since been enjoying good health, and has increased 7½ kilograms in weight. On examining her I noticed that the thyroid gland on the right side was becoming enlarged, as were also both tonsils. I leave it to the physiologists to explain this condition.

Professor Ceci, also showed another patient from whom he had removed the upper half of the scapula, leaving the periosteum. The whole bone was reproduced, together with the spine and processes.

Dr. Celsus Motta, of Genoa, presented a patient in whom he had preformed a resection of the knee-joint according to

Caselli's method. This method has given excellent results in his clinic in Genoa; and, as it is simple and easy, I will endeavor to briefly describe it:

The articulation is opened with a semi-lunar incision, which begins and terminates four centimeters above the condyles, cutting the ligamentum patellæ at its middle. Having dissected and raised the flap so formed, we expose the femoral epiphysis which is resected. This resection is performed with the saw, and is made beginning two centimeters above the anterior inter-condyloid notch, and terminating at the insertion of the crucial ligaments. With this section we expose, as we readily understand, not only the spongy substance of the epiphyses, but also the epiphyseal cartilage and the spongy substance of the inferior extremity of the diaphysis of the femur. It permits us, therefore, to minutely examine this part, and if any diseased points are found they can be removed with Volkmann's spoons. For the tibia it is sufficient ordinarily, as has been noted by König, to perform a section of the cartilaginous meniscus, or of the most superficial layers of the epiphyses. This can easily be done with the scalpel. Finally, to complete the resection, we remove, where it is possible, the articular capsule; if not possible, we excise the synovial membrane and scoop accurately with Volkmann's spoons. This operative process has the great advantage of permitting the removal of the morbid portion of the spongy substance of the femur, preserving most of the epiphyseal cartilages. The crucial ligaments are not touched, and therefore we preserve the normal anatomical relations of the extremities of the bones, while in Volkmann's process the bony ends are completely dissected, and by so doing the whole articular cavity is exposed.

Professor Caselli's method does not alter the length of the

femur, nor of the tibia, nor their normal relations; therefore there is no shortening.

Dr. Caneva, of Genoa, followed with an excellent paper on the transplantation of the tendonous insertions in the bones.

Professor Caselli made a report of several removals of intracranial tumors. He also related a case of extrophy of the bladder.

Professor Bassini, of Padua, described a new operation for the radical cure of inguinal hernia, practiced by him with success; it was unanimously approved. The learned Professor was made the recipient of many complimentary remarks.

Professor Bonora entertained the society on the subject of ovariotomy, reporting a number of cases. He also reported a successful operation of a resection of a piece of gangrenous intestine.

Dr. Muguai, of Rome, reported many resections of the knee-joint.

Professor Roth spoke on the supra-pubic operation for the extraction of vesical calculi.

The election of officers for the ensuing year then occurred, with the following result: Professor Antonio D'Antona, president; Professors Bottini and Corradi, vice-presidents. Naples was chosen for the next place of meeting.

A. LAGORIO, M.D.

DOMESTIC CORRESPONDENCE.

CALCAREOUS CONCRETIONS IN THE EXTERNAL EAR.

To the Editor of the Chicago Medical Journal and Examiner.

The following case, occurring in an old patient of mine, has seemed to me to be unusual. I had treated the patient for several years for slight ailments, chief of which was an occasional malarial attack that gave me some trouble on account of her inability to take quinine.

Last winter she suffered from the vomiting of pregnancy. I treated the case for about two months without result, when, as the symptoms became alarming, Dr. Byford, at my request, brought on a miscarriage. She was, of course, much prostrated and her stomach remained for a long time irritable and there were distinct evidences of spinal anæmia, neither of which symptoms have yet entirely disappeared.

Her recovery, though slow, was uninterrupted, with the exception of an induration on the calf of the left leg where a hypodermic needle had been inserted. This induration gradually assumed the size of half a pullet's egg, became red and tender, and finally fluctuated distinctly under the finger. I delayed opening it, and, under the application of poultices it finally disappeared, leaving a depression somewhat more than an inch across. The depression still remains. I give these details, as they may have some bearing on the subsequent history of the case.

In August last, she called my attention to a painful swelling in the external meatus of the right ear. I considered it

to be a case of ordinary superficial inflammation of the meatus, and directed instillation of a solution of morphine. The pain at once ceased, and in a day or two the swelling subsided and I supposed that the trouble had resolved, as has usually occurred in my experience, after such treatment. But a little swelling and tenderness remained. In about two weeks, without further symptoms than a trifling uneasiness, there was a discharge of a drop of purulent fluid which I am sorry that I had no opportunity of examining. I paid no more attention to the case until about a month after this, when she called at my office and told me that the same morning the ear had felt a little uncomfortable, and on picking it a calcareous mass about as large as a millet seed had come away. A day or two before she had removed a similar mass. These masses, she said, resembled lumps of old lime as nearly as anything she could think of.

On examining the ear I saw a red and indurated place about half way down the meatus in the upper portion of the posterior wall. In the middle of this spot was a pit about as large as the mass removed, and surrounding the pit a greater or less amount of a white granular substance, which grated against the probe and was of stony hardness. I attempted to detach some of it with the sharpened end of the probe, but it was firmly adherent, and appeared to be infiltrated throughout the tissue, and I succeeded in getting away only a few small flakes. Besides this, nothing unusual was detected in the ear with the exception of a slight redness of the posterior rim of the drum. The hearing was perfect. A slight feeling of irritation was noticed for some weeks, but gradually passed away. At present, so far as I can discover, the ear is quite normal.

I do not think that there is any possibility of the concretion being a foreign body; nothing with the exception of the morphine was introduced into the ear, and that could hardly have produced such an effect; besides, part at least of the substance was infiltrated among the tissues of the meatus.

Superficial abscesses where there is a free discharge of pus do not undergo calcareous degeneration.

The appearance was that of a gouty concretion, and there is a trace of gout in the family, her father,—though an active and abstemious man—having had slight attacks of the affection; but she has never had any gouty symptom that I have been able to discover, and gout does not suppurate.

I have never heard of a case like this, and the somewhat limited amount of literature on diseases of the ear accessible to me makes no mention of anything of the kind.

LESTER CURTIS, M.D.

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SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 21st, 1887.—THE PRESIDENT, EDMUND J. DOERING, M.D., in the chair.

DR. JAMES I. TUCKER reported a case of "Herpes Oticobrachialis," which appeared in the April number of the JOURNAL AND EXAMINER.

DR. JOSEPH ZEISLER, in opening the discussion, thought cases of herpes zoster were comparatively rare here; in the last two years he had met with only one, affecting the fourth and fifth intercostal spaces of the right side. Although physiological and anatomical examinations have not yet proven the existence of true trophic fibres in the nerves, there can be no doubt that zoster must be considered as a tropho-neurotic disease. The case was especially interesting from the possibility of syphilis being the cause of the disorder, and from the large area involved.

DR. TUCKER said that one point in reference to herpes zoster, especially herpes zoster frontalis, is that chronic bronchitis is sure to follow it, and life generally terminates in that way.

PROFESSOR CHARLES WARRINGTON EARLE asked if the author had not found that these cases almost always require the same tonic treatment that neuralgias do, viz., the exhibition of quinine and iron, and a good, generous diet, before a cure can be effected.

DR. TUCKER replied that all the patients that he had seen suffering from the disease have been depleted, and certainly the remedies just mentioned would be needed.

PROFESSOR E. L. HOLMES reported a case of

CHANCRE OF THE EYELID.

Cases of chancre of the lids are of interest, not so much on account of their rareness, as of the difficulty in establishing a certain and early diagnosis, and the fact that suspicion even may not be awakened till quite late in the development. It is many years, probably twenty, since he had seen a case of primary specific sore on the genital organs. If he remembered correctly what he formerly observed, and what he learned from competent authorities, it is undoubtedly true that even an ulcer on the genital organs cannot always be easily diagnosticated. The swelling of the pre-auricular glands is quite often the result of simple abscess of the lids, especially if it is situated near the external angle. When, however, a circumscribed

disease of the lids is accompanied by multiple pre-auricular and submaxillary glandular enlargement, suspicion becomes almost certainty. This has been the fact in four of the five cases which he had seen. In one case there was not sufficient swelling of the glands to attract either his attention or that of the patient.

Some months ago he had mentioned in this Society the case of a laborer in a rolling mill who received a severe burn on the side of the body from a "flash," and on the left upper lid from a drop of the molten slag. That small round burn became infected from some source unknown to the patient, and after some time presented the appearance of a true chancre with glandular swellings and characteristic eruptions. No evidence of a lesion could be found on the genital organs. Every symptom disappeared under energetic mercurial treatment.

Very recently Mr. P. M., 45 years of age, married, also a workman in a rolling mill, received a "flash," a portion of which struck the left upper lid and inflicted quite a severe burn of the integument. The conjunctiva was also slightly burned. At the end of a week the patient came to him with the lids much swollen, red and tender, with a hard, dry, thin and red incrustation as one sees on a superficial abrasion of the skin. The patient stated that he had rubbed the lids several times during the week with the back of his hand, which was more or less covered with grime and sand. He did this to relieve the irritation of the eye. There was nothing in the appearance of the lids or of the eye to excite suspicion of any complication. For ten days the eye was treated with mild lotions and ointments without the slightest benefit. On the appearance of pre-auricular and submaxillary swelling the patient was referred to Professor Hyde. Professor Hyde could simply suspect specific infection, but preferred to delay definite opinion for a few days. In a week or more the characteristic eruption appeared, with increased severity of the local symptoms. Large doses of blue mass and iodide of potassium relieved all the symptoms, local as well as general. The eye assumed its normal appearance in about three weeks.

PROFESSOR F. C. HOTZ said that as the author wished the discussion to be conducted on the line of experience of general practitioners, not specialists, he hardly felt that he was the right person to open it. As the author stated, these primary syphilitic ulcerations, chancres of the eyelids, are of very rare occurrence, and in a long experience of private and hospital practice in this country and Europe he could remember but one case coming under his observation of a primary syphilitic sore, and it was located on the conjunctival surface of the upper lid—a most curious place for the infection. A patient came to him about two years ago with the lid tender and very much swollen, and on turning it he saw a large ulcer with all the typical appearance of chancre of the prepuce. There was no doubt of its syphilitic character, but it puzzled him as to how the infection could have taken place there. On questioning the patient he learned that four or five weeks previously he got a little cinder or something in his eye,

and his room-mate turned the upper lid, saw the foreign substance, and removed it with his tongue. Further questioning brought out the fact that this man was syphilitic.

DR. JOSEPH ZEISLER mentioned the possibility of contamination by kissing and by instruments. The most peculiar cases of chancre, in regard to the locality, had been related by Deloir in his "Discours sur le Syphilis," some of which could only be explained by certain French habits.

PROFESSOR WILLIAM T. BELFIELD said, in reference to one point raised by Professor Holmes, viz., infection without ulceration, he thought it was a well known fact that it has frequently occurred. There is nothing about syphilitic infection that implies ulceration. The morbid material is introduced into the skin and occasions a certain amount of inflammation at the point of infection. Whether that results in ulceration depends on the nutrition the parts receive; if they are well nourished there need be no ulcer, but as a rule some of the cells that are formed die and ulceration is the result. Occasionally the inflammation is so slight that neither ulceration nor even induration is produced locally; since syphilis is undeniably inoculated—in exceptional cases—without the production of any features of the hard chancre. Nor is the syphilitic the only virus whose local effects are thus variable; thus, the virus of charbon, or "wool sorters' disease" while usually producing a malignant pustule at the point of inoculation, may be communicated without any local ulceration—indeed by simple inhalation.

PROFESSOR D. A. K. STEELE read a paper entitled

INTUSSUSCEPTION IN INFANTS.

Intussusception or invagination of the upper into the lower part of the intestine, embraces three layers of the bowel which include all the coats of the intestines. The diagnosis of intussusception in an infant is usually an easy matter; a baby previously in good health is taken with sudden violent vomiting, with loud cries and evidence of abdominal pain and uneasiness occurring at frequent irregular intervals, accompanied with severe straining and the passage at first of fecal matter, then a mucous tinged with blood, and later of blood alone in considerable quantities. Thirst, anxious expression and collapse are marked symptoms. A distinct sausage shaped tumor can frequently be felt at the seat of the obstruction in the abdomen.

Treatment may be divided into medicinal, mechanical and operative. The medicinal plan is palliative but rarely curative.

The author described the details of the mechanical plan of treatment as follows: Having clearly established a diagnosis of intussusception and previously given an opiate to quiet all peristalsis, he anæsthetizes the child with chloroform and then carries a rectal tube or large catheter about six inches within the anus. He attaches to this tube a flexible rubber tube two or three feet long attached to a small glass funnel. Into this funnel are poured alternately solutions of soda bi-carbonate and tartaric acid, thus generating carbonic acid gas and rapidly and safely inflating the large intestine. Three drachms of each will generate enough gas to completely

distend the colon of a child. If this pressure is not sufficient to relieve the obstructions, he attaches an ordinary double bulb syringe and inflates with air about as much as he thinks the bowel will stand; while the abdomen is being carefully manipulated by an assistant, he patiently, persistently and repeatedly employs these measures coupled with massage, abdominal taxis, inversion of child, etc., from twenty-four to forty-eight hours, when, if there is no relief he advises laparotomy. In case the obstruction is at the ileo-cæcal valve and is irreducible and an artificial anus cannot be readily formed, an ileo-colotony or implantation of the divided ileum above the obstruction into a slit-like orifice in the colon below the obstruction would be justifiable procedure. Senn's recent experiments on animals prove that it can be done with success. Several cases were reported which had been successfully treated by the mechanical method.

PROFESSOR C. W. EARLE, in opening the discussion, said that Professor Steele had presented the symptoms of this terrible difficulty so fully that there is little more to be said. He was glad that the author dwelt upon the symptom of constriction of part of the bowel, which is probably one of the chief causes for this accident. He must take issue with him in regard to the ease with which he diagnosticates some of these cases. Professor Steele's experience has been very different from his own when he is able to say that the diagnosis of intussusception in a child is made out without much difficulty. In a number of cases he has seen there has been an absence of all the symptoms which the author has narrated. He remembered a case which occurred several years ago in an outside village, in which he made the post mortem examination and found a very distinct intussusception. In that case we could get none of the symptoms spoken of; there was no tenesmus, no bloody discharge, no protrusion of the invaginated portion of the intestine, no sausage-shaped tumor of the abdomen, and yet the child had intussusception, probably from eating a large amount of cherries as a number of cherry pits were found in the bowel at the autopsy.

As a medical man it might be expected that he would oppose a surgical procedure, but the medical treatment of this difficulty is so absolutely hopeless that it seems to him if laparotomy offers anything at all we should be ready to accept any procedure the surgeons have to offer. However, the results of Professsor Steele's process of treatment by inversion, and shaking and filling the bowel are really better than those of surgeons up to this time. It is a well known fact that laparotomy for the relief of intussusception is followed by greater mortality than laparotomy for any other cause. But if the diagnosis is well made out, and particularly if the pulse is rapid and the child shows profound symptoms which point unmistakably to this difficulty, it seemed to him that we are hardly justified in waiting three days; he thought at the end of twenty-four hours we should cease to try the ordinary methods and proceed to do the operation.

PROFESSOR F. E. WAXHAM said he agreed with Professor Earle in regard to the difficulty of making the diagnosis in cases of intussusception,

especially in infants. In many cases he thought the diagnosis very difficult, and sometimes a certain and absolute diagnosis is almost impossible. This is true for the reason that all the symptoms that have been enumerated as characteristic of the disease are not present in every case. The tumor is as frequently absent as present; if a small amount of intestine is involved in the intussusception it is impossible to detect it. Again, the bloody discharges are frequently absent, and the protrusion of the intestine from the anus, which is given as a prominent symptom, is often absent. Indeed, in many cases the incessant vomiting, obstinate constipation and the tenesmus are the only symptoms. He would refer to the differential diagnosis of intussusception: fecal impaction occasionally presents symptoms analogous to intussusception. Impaction is rare in infancy, but is more frequently observed in the adult and in the older children. It may give rise to a tumor, vomiting, tenesmus, tympanites and even protrusion of the intestine from the anus. These symptoms closely resemble those of intussusception, but in impaction the vomiting is not usually as obstinate and large; copious enemas will cause the disappearance of the impaction. Again, in impaction we do not get the rapid and great prostration that is observed in intussusception. Cholera infantum may be mistaken for intussusception, for we have the same rapid and great prostration and collapse, we have the incessant vomiting, but in cholera infantum we have the large, copious watery passages instead of the obstinate constipation followed by the bloody discharges. Dysentery presents symptoms closely resembling intussusception in many cases; we have vomiting, tenesmus, frequent straining, bloody passages and not unfrequently protrusion of the intestine from the anus, but in dysentery the vomiting is not so obstinate nor the prostration so great. Typhlitis may present symptoms very closely resembling intussusception; as the result of inflammation at the ileo-cæcal valve we will have vomiting, intestinal pain, tympanites—obstinate constipation which it is impossible oftentimes to overcome. The diagnosis in these cases is very difficult, and he said he knew of one case of typhlitis where several surgeons thought seriously of operating for a suspected intussusception.

But in typhlitis the tumor, which results from inflammation and infiltration is in the right side, while in intussusception the tumor when observed is in the left iliac region or in the transverse colon, for although the intussusception takes place at the ileo-cæcal valve, if the tumor is large enough to be observed, the smaller intestine rolls in the larger until the tumor appears in the left side instead of the right. In typhlitis we have a history of acute inflammation, not so in case of intussusception. Peritonitis will also frequently give rise to symptoms resembling those of intussusception; we have frequent vomiting, obstinate constipation, abdominal pain and tympanites. He remembered a case that was treated for several days for intussusception, and not until the administration of morphia and lime water was the vomiting overcome and a correct diagnosis made. The vomiting could not have been relieved by medication in a case of intussusception. In peritonitis we usually have the gradual onset of the disease,

more sudden in case of intussusception. In peritonitis we have the symptoms of acute inflammation existing for several days before we get symptoms of obstruction. In intussusception the symptoms of obstruction and shock appear early. In peritonitis, although the constipation is often obstinate, yet the vomiting is not as frequent and uncontrollable as in intussusception, nor do we have the rapid prostration in the former disease that is so characteristic of the latter. There are other forms of obstruction, such as the twisting of the intestine upon itself, pressure upon the intestine by a band of lymph, or strangulation of the intestine in a congenital opening in the diaphragm, any of which will give rise to symptoms exactly corresponding to intussusception.

In regard to the treatment, little remained to be said. Not infrequently, when an intussusception is suspected, the cases are treated with physic, castor oil, croton oil, or quicksilver, in order to prove the diagnosis. This treatment should be mentioned only to be condemned. No remedies should be given that will increase the peristaltic contraction, but opiates given to prevent it. Quicksilver may be used with benefit in those cases where the invagination is low down in the bowel, or where the intussusception is of such extent that it reaches into the lower bowel, or perhaps near the anus. In such cases the child should he inverted and the quicksilver used per rectum, and the pressure and weight of the quicksilver will assist greatly in the restoration of the invaginated mass. He fully agreed in the recommendation of laparotomy in cases where mechanical measures fail. When we have faithfully but unsuccessfully tried medicinal and mechanical measures, he thought we should resort to laparotomy, providing a positive diagnosis can be made, and we should not delay too long, for the longer the operation is delayed the less the chances are of recovery.

PROFESSOR A. E. HOADLEY wished to make one suggestion as to the surgical treatment of such cases. The author, on going into the surgical treatment thoroughly, had left the idea, he thought, that about all that can be done for cases of acute invagination of the intestine is to unfold the invaginated intestine, and if this cannot be done, it must be excised and an artificial anus made. Of course he does not advise the resection of the invagination, but advises an artificial anus as a temporary means. Where invagination is acute it obstructs the lumen of the intestine, and all the urgent symptoms are consequent on the obstruction of the bowels, not because the tissues are liable to ulceration or sloughing, provided that the tension above the invagination is promptly relieved. If the tension above the stricture is relieved the tissues at the stricture can take care of themselves, the strangulation will be immediately relieved in a measure, so that the circulation can be carried on at the seat of invagination. Relief of tension controls peristalsis, and no further invagination will take place, congestion will be relieved and the tissues saved. There has been an operation suggested for that purpose which is applicable in all cases where to unfold the invagination is more dangerous than to leave it alone or

excise and establish an artificial anus. The operation is to bring that portion of the bowel above the invagination to that immediately below and there make an opening in each, stitch the openings together, and thus form an outlet for the distended intestine above. In case the invaginated portion loses its vitality there is no objection to its sloughing, as the slough can readily pass down, as the gut is not closed above. In his own practice he had seen two cases of recovery from intussusception, in which there was no doubt about the diagnosis; in one case a sausage-shaped tumor could be felt across the median line, with all the acute symptoms except, perhaps, the bloody discharges. The invaginations in these cases were of the colon, and not ileo-cæcal, and the lumen of the gut was not completely closed. There was no particular distension, but there was a large and painful tumor, with tenesmus and diarrhœa. In one case, in which the diagnosis was confirmed by several physicians, the tumor remained for more than a year, and at any time, if pressure was made over it, there would be tenesmus of the bowel; yet the child, who is now 8 years old, fully recovered. He then had a patient under treatment in whom two and a half months ago there was probably intussusception of the colon. A painful tumor presented on the left side which could be plainly felt from day to day, associated with all the irritable symptoms of the bowels, but the invagination did not occlude the lumen of the bowel, therefore the most distressing symptoms were absent. The tumor gradually grew smaller, less tender, less painful, and the child became free from the irritation caused by that invagination.

Dr. J. FRANK asked if, when the invagination is situated above the ileo-cæcal valve, water injected would pass the valve itself? He hardly thought the small amounts that the author spoke of having injected would have reduced the invagination. Dr. Frank was not opposed to giving cathartics in cases where they might do good, and thought sometimes they do not do as much harm as an operation. The intestines are held up by mesenteries, and if the principal part of the intestine cannot invaginate itself where it is held fast it cannot come down. A cathartic produces peristalsis which is always towards the rectum, and if the part is held up by the mesentery, the peristaltic motion will not bring it down any further, and yet will relieve the intussusception. He thought many cases are cured by cathartics. He had a case some time ago where the child was pulseless and cold, the eyes turned in the sockets, and there was tenesmus and vomiting. After trying nearly everything a large dose of calomel was given, and as soon as there was a movement of the bowels the child was all right.

PROFESSOR STEELE, in closing the discussion, said, in regard to Professor Earle's query as to the ease of making the diagnosis: the diagnosis is not always an easy matter. In the first case reported the diagnosis was easy, because the case presented the symptoms laid down in the books as nearly as could be: there were vomiting, tenesmus, bloody stools, absolute constipation and a lozenge-shaped tumor—but that is the only case of the

four reported in which there were all the symptoms; in two there were no tumors, and in one the tumor was indistinct and irregular in outline. There was no pain in that case. In none of the cases was the diagnosis verified by post-mortem examination. There is an element of doubt as regards the diagnosis, but it had been formed in each case, after careful examination by competent physicians, and was considered fairly certain. In regard to the relative safety of ether and chloroform in children, he could not give the statistics, but the administration of chloroform to children is a very safe procedure as compared with its administration to adults. In regard to the differential diagnosis, Professor Waxham presented all the points very fully. In a paper of this character he did not wish to go into that subject. In regard to the operation of cutting the bowel above and below the point of obstruction, that he alluded to as an operation having been done experimentally on animals with success by Professor Senn, of Milwaukee. So far as he knew, there are no statistics showing that it has been done on man. The case of obstruction occurring in a child, with painful tumor, spoken of by Professor Hoadley, was a case of chronic obstruction in which the lumen was not perfectly occluded, and those cases are not dangerous. So long as the lumen is not absolutely interfered with the processes of nutrition go on. Cases of chronic obstruction were not considered in the paper; he spoke only of acute obstruction due to intussusception. Water passes the ileo-cæcal valve by dilatation from over-distension. He had seen the experiment tried on animals; by opening the abdomen and forcibly injecting water, the colon would become distended to its utmost capacity, and by-and-by the tissues would begin to yield, the valve would become incompetent and the water would pass. The quantity of water used for injections was smaller than if the obstruction had been higher up. The case of acute obstruction mentioned by Dr. Frank, that was relieved by a large dose of calomel, was probably acute enteritis, such a case as would have been relieved by bleeding many years ago. When we are called to these cases of acute intestinal obstruction where there is a doubt as to its cause, we should take into consideration all the factors; the age of the child, the sex, the suddenness of the onset, the presence of a majority of symptoms that are said to be present in intussusception, and then make a thorough, complete and systematic palpation of the abdomen, aided, if necessary, by the distension of the colon with carbonic acid gas. By the alternate injection of an acid and alkaline solution into the rectum, one can distend the colon so that it can be mapped out perfectly, and the location of the obstruction be determined.

PROFESSOR ELBERT WING exhibited some pathological specimens, and said that these specimens were obtained at the County Hospital and had been brought immediately, because specimens are more interesting when they are fresh. The case came to the dead-house without any history except that the man was known to have had some trouble with his heart. The internes were careless, and no careful record was kept. The man was about 60 years old and very fat. There was no fluid in the abdominal cavity. The pericardium contained perhaps 30 cu. cm. of clear serous fluid, and the

heart was considerably larger than the man's fist, with one or two of the so-called "milk-spots" on the surface. The right auricle was distended with dark, partly clotted blood, the right ventricle contained a very small quantity of fluid blood and a small clot; the left auricle and ventricle were empty. Upon section the heart showed no lesion of the valves; there was slight atheroma at the base of the aorta. The endocardium showed the streaks and bands of grayish discoloration which are taken as evidence of chronic endocarditis; there was also, over the surface of the endocardium, the mottled appearance of myocarditis with fatty degeneration. The left pleural cavity was empty and without adhesions. The surface of the lung presented a few spots of emphysema, and upon section the bronchial tubes were found extremely congested and lined with a thick coat of mucus throughout the bronchial tree. On the right side there was an adhesion along the median line, and the pleural cavity contained 3,700 cu. cm. of a clear serous fluid, slightly reddish, containing no shreds and no plaques of fibrin. The entire costal pleura of this side was much thickened, of a slightly velvety appearance and bright red color, easily separated from the underlying tissue and easily torn in manipulation. The deposit of fibrin could be removed only by considerable force, and the pleural surface then showed manifold small red dots, resembling the mouths of severed capillaries. Completely covering the surface of the right lung there was a film of lymph which varied in thickness from that of a heavy sheet of blotting-paper to 1 or 2 millimetres. Over the lower lobe this had taken on organization, and contained bands of connective tissue. Throughout the extent of the visceral layer of the pleura it could be removed, leaving the surface smooth and glistening. The lung on the cut surfaces was of a steel-gray, mottled with spots of pigment discoloration. It was completely devoid of air, and a piece cut out from it and thrown into the water would sink. Upon the superior border of the spleen there was a small plaque in which the connective tissue of the capsule was largely increased. The cut surface of the organ presented a mahogany color and as a whole was quite firm, verifying the diagnosis of what we would expect to find in such cases, chronic passive hyperæmia of the spleen causing an increase of the connective tissue. The kidneys were hardly enlarged at all, the capsule was not thickened and was easily removed. Upon section the cut surfaces of each of the organs was a very dark red color, the vessels all full of dark-colored blood, and the organs slightly firmer than normal. The left lobe of the liver presented a peculiar appearance. It looked and felt a little granular, which seemed to be due to a wrinkling of the capsule. There was a similar appearance along the anterior border, and near the line of the suspensory ligament. That large spot was triangular upon the surface, say 5 cm. along each side, and extended into the organ in a pyramidal shape, the apex being near the hylus of the organ. The line of demarcation between the wrinkled and the unchanged surface of the organ was sharply defined. On section these portions of the organ presented the characteristic appearance of advanced simple atrophy, a dark brown slate-color, the lobule distinct but very much diminished in size. That portion

of the organ not described was in the condition known as "nutmeg liver." The omentum was in a condition rarely seen. It was 25x12x1½ cm., somewhat lobulated, and along the anterior surface there were broad radiating bands of fibrous tissue. The organ as a whole was very firm and solid, and on section little lobules of fatty tissue could be isolated. The condition was that of marked hypertrophy of the fatty tissue of the organ, together with a great increase of the connective tissue, the latter due to chronic passive hyperæmia, the former part of the general marked increase of adipose tissue throughout the body. There was also considerable œdema of the right leg, but no thrombosis in the iliac vein. Examination of the veins outside of the abdominal cavities was not permitted. With the conditions described as a basis, the diagnosis was: chronic endo-myocarditis with fatty degeneration; chronic pleuritis (costal) with effusion, atalectasis from compression, right side; chronic passive hyperæmia of spleen, kidneys and liver, with added circumscribed simple atrophy of the latter; hypertrophy and chronic passive hyperæmia of the omentum; chronic venus thrombosis with œdema of the right leg.

PROFESSOR T. BELFIELD read a paper on

DIGITAL EXPLORATION OF THE KIDNEY, WITH REPORT OF THREE CASES.

Of some 250 cases of nephrectomy heretofore reported, about 44 per centum have died from the effects of the operation. The chief causes of death have been:

1. Shock (42 per centum of the fatal cases).
2. Uræmia (14 per centum).
3. Peritonitis (21 per centum).

These three factors were thus responsible for 77 per centum of all deaths. Improvement in the results of renal surgery seems, therefore, to require means for the avoidance of these three great dangers.

The chances of fatal shock are decreased by early operation, before the patient is exhausted and the damage to kidney-tissue extensive through long illness. This self-evident proposition is illustrated by the fact that, while about 18 per centum of all (250) nephrectomies have died of shock, yet of 24 nephrotomies of fairly healthy kidneys removed for wounds of loin, ureter, for mobility, etc., not a single death occurred from shock.

The greatest obstacle to the early surgical treatment of renal diseases has been *faulty diagnosis*. Such cases are usually treated as lumbago, sciatica, hip joint disease, and especially cystitis, for a long time before the true seat of the lesion is detected or even suspected. Since it is not always remembered that pyelitis produces symptoms identical with those commonly ascribed to cystitis, the former is not suspected, and a diagnosis of cystitis is made; and as cystitis is still too generally regarded as an entity—a disease instead of a mere symptom requiring explanation—the patient is treated for "chronic cystitis." Finally, months or years later, a lumbar swelling or other symptom reveals the renal origin of the difficulty. Mean-

while the patient has become so enfeebled that he succumbs to the shock of an operation that could have been safely borne at an earlier period. Early exploration of the kidney—a comparatively slight operation—has, by drainage of the pelvis, in many cases relieved a difficulty which at a later stage would have required nephrectomy, a formidable operation; moreover, a preliminary drainage has been shown to be a valuable factor in diminishing mortality from nephrectomy. Thus, of seventy-three nephrectomies for suppurative lesions collected by Gross, twelve were made after previous exploration of the kidney, with but one death; of the remaining sixty-one —without previous nephrotomy—thirty-one died.

Uræmia rarely occurs after any renal operation provided the second kidney be present and in healthy condition. While commonly associated with nephrectomy, one of the annexed cases shows that uræmia may be inevitable after simple nephrotomy; hence a necessary preliminary to any renal operation should be an attempt to ascertain the functional condition of the opposite kidney. In the female this can often be accomplished by cauterizing the ureter, after Pawlik's method; in the male probably the best, though still an uncertain means, is Silbermann's instrument for compressing one ureter. The statement that the abdominal incision, by permitting digital examination of the opposite kidney, obviates the dangers of uræmia, is fallacious; for in many cases kidneys which are indistinguishable by the finger, or even by the eye, from normal organs, are extensively invaded by disease—inflammatory, tuberculous or calculous. The kidneys exhibited by Professor Steele are signal examples—normal in size, contour and consistence, yet each extensively tuberculous. Palpation through an abdominal incision could have detected nothing abnormal in either of those kidneys.

The following cases illustrate several of the principles above enunciated:

S. M., widow, 26 years old, delicate since childhood; has had dyspepsia for years; for a year past has suffered from headache, pain in back and left thigh; menstrual intervals shortened to two or three weeks. Was variously treated for lumbago, sciatica and ovarian disease. In March, 1886, urination was unduly frequent and sometimes painful; urine contained pus and blood; was treated for cystitis.

On admission she was emaciated and feeble; urination every half-hour or oftener and painful; had frequent pain in lumbar region, often shooting down to left thigh; and required morphine constantly. Urine acid, depositing blood, pus, and occasional rosettes of large uric acid crystals.

Diagnosis, calculous pyelitis, probably limited to left side; right ureter catheterized and urine appeared normal.

November 29th, 1886, the kidney was exposed and the pelvis explored; mucous membrane rough and ulcerated, clots of pus evacuated; wound in kidney packed with gauze.

Except for persistent vomiting for a few days, recovery was without notable incident. The renal fistula was closed on the twenty-first day; patient has since been free from all her former symptoms and is regaining flesh and strength.

G. F., 30 years old, was knocked down by a cable car November 28th, receiving a lacerated wound of right hand and various contusions. The hand was dressed, and patient presented no notable symptoms until December 11th, when often straining at stool he passed a large quantity of blood with the urine and had severe pain and tenderness over the right kidney, with some temperature; these symptoms persisted in spite of rest, ergot, gallic acid and opium; the right loin while not swollen, felt boggy. December 22nd, the patient having experieuced several irregular chills and sweats during the previous day, a lumbar incision was made down to the right kidney. The peri-renal tissues were found closely adherent, extravasated blood was seen under the capsule and a rent one and a quartes inches long was found in the posterior surface of the kidney extending into the pelvis; about half an ounce of a watery fluid lay behind the kidney. A large drainage tube was inserted. The temperature remained high for several days, after which recovery rapidly ensued, and January 14th the patient was discharged well; the wound entirely healed.

C. L., 48 years old, farmer, began some two and a half years ago to suffer from slight pain and stiffness in the loins; later, pus appeared in the urine; was treated for Bright's disease. About a year ago urination became frequent and sometimes painful; was supposed to have cystitis. Has lost flesh; his rest has been much disturbed by frequent calls to urinate. Six months ago he passed two small calculi after some renal colic on left side; since that time has had slight colic on left side several times, followed by expulsion of clumps of pus but no calculi.

Diagnosis, tuberculous or calculous pyelitis, probably former; bacilli were found in one examination of pus, and the lower organs were normal.

Exploration, January 26th. The kidney (left) was considerably enlarged; no calculus could be detected with finger or needle. Incision through kidney showed the pelvis considerably dilated, its orifice narrowed by a thickening of upper part of ureter; mucous membrane ulcerated in several places; the pyelitis evidently tuberculous.

Nothing of note occurred until the fifth day, when the urine became scanty and tinged with blood; soon the usual evidences of uræmia became manifest, and death ensued from this cause on the eleventh day. A partial autopsy showed that the right kidney was extensively, the left slightly tuberculous; bladder and prostate normal. Evidently the right kidney, which had never caused pain, had been first diseased; the function of the left, which had latterly been performing most of the renal excretion, had been arrested, not by the slight incision, but by the congestion which followed the removal of the accustomed pressure in the dilated pelvis. Similarly uræmia has followed the sudden evacuation of a habitually distended bladder.

To summarize: 1. Surgical affections of the kidney and its pelvis are frequently masked under symptoms of cystitis, lumbago, hip-joint diseases, etc.

2. Digital exploration of the kidney and its pelvis often affords the only available means for accurate diagnosis in the early stages.

3. When made with due precautions, this operation is almost devoid of danger; while saving the kidney, it may accomplish all that a dangerous nephrectomy could offer at a later stage; and if it fails to cure, it materially increases the chances of recovery from a subsequent nephrectomy.

4. An investigation into the functional condition of the opposite kidney should precede an exploratory incision into the pelvis.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, March 18th, 1887.

I.—JAGGARD. *A Puerperal Uterus, Showing Endometritis Puerperalis.*

II.—JACKSON. *A Case of Removal of the Ovaries and Tubes for Bleeding Fibro-Myoma of the Uterus.*

III.—FENGER. *The Operative Treatment of Retroperitoneal Cysts in Connection with Mikulicz' Method of Drainage.*

The PRESIDENT, CHARLES WARRINGTON EARLE, M.D., in the Chair.

I.—DR. W. W. JAGGARD presented a

Puerperal Uterus, showing Endometritis Puerperalis.

The material was placed at his disposal through the courtesy of Drs. Pickard, Hibbard and Plummer, of the Cook County Hospital.

History: Patient 64003, Ward 14, Swede, 24 years old. I para. Labor, March 13th. Vertex presentation, R. O. P.: First stage, ten hours; second stage, three hours; third stage, ten minutes; male child; wt. 6 lbs., 13 oz.; condition good. Severe post-partum hæmorrhage, after expression of placenta; intra-uterine irrigation with hot water, vinegar, finally mercuric chloride, 1: 4000: perineum sutured, vaginal douche. Chill, three hours after delivery; temperature 101°.8 F.; pulse rapid and feeble. Patient died four days later; temperature reaching the maximum, 103° F. a few hours before death.

The autopsy disclosed puerperal ulcers in the vagina, diphtheritic endometritis, splenic tumor, ulcerative septic-endocarditis. The ovaries, tubes and peritoneum were not involved in the inflammatory process. The case apparently corresponded to the form described by Buhl in 1861 as "Puerperal pyæmia without peritonitis" (metro-phlebitis). The poison had apparently gained direct access to the veins, the endometritis being only a prominent symptom.

It must not be supposed that the mortality rate from child-bed fever in the lying-in wards at the Cook County Hospital is high. About 400 women are annually delivered in that institution, and less than one-half of one per centum perish from puerperal fever. Rigid antiseptic precautions, in conformity with the Semmelweis doctrine—every case of child-bed fever arises from the resorption of decomposing organic matter through some local lesion in the genital tract—have been instituted and carried out with commendable intelligence, skill and zeal by the internes. The only criticism that Dr. Jaggard wished to make was upon the use of mercuric chloride for the purpose of intra-uterine irrigation.

DISCUSSION.

DR. CHARLES WARRINGTON EARLE: I think there is evidence accumulating at this time which shows that we are not certain that the decidua comes away completely, and in a great number of cases there is not only a considerable amount of this left, but also pieces of membrane, etc., etc., which no one, however careful, can detect.

Whenever a high temperature takes place on the eighth or ninth or tenth day, I am in the habit of washing out the uterus, and then if the high temperature continues, to curette, and in almost every case the amount brought away astonishes everybody, particularly the attending accoucheur. Sometimes 2 or 3 drachms are brought away; the temperature becomes normal in 12 hours and a speedy convalescence takes place. I would like to ask what th eexperience and observation of the other Fellows of the Society have been in regard to the certainty which they feel that *everything* comes away.

I am getting together a series of cases in which I will endeavor to show that where there is a high temperature that comes on as late as the tenth or eleventh day, if it does not come down after a thorough intra-uterine douche with carbolized water, curetting should be resorted to, and that it will in almost every case bring away an amount of material that none of us expect. In many of these cases the temperature goes down at once.

I had a case on Hoyne street, which took place in the practice of a graduate of one of our schools,—a young man of excellent record, and one who is thoroughly in accord with us on antiseptic obstetrics. On the tenth day the temperature was 103½° F.; an intra-uterine douche did not bring it down. The next day it was 105½° F. I curetted and brought away a mass of material which surprised me as well as the practitioner. The woman made an excellent recovery without a bad symptom.

DR. A. REEVES JACKSON: It seems, to look at this specimen, that the curettement would have to be exceedingly deep; especially after the infection of the walls, you could hardly get away all the septic influence. There may have been a stage in the history of that case in which it would have been a proper treatment.

DR. CHRISTIAN FENGER: In consultation, last fall, I saw a case of abortion, not childbirth, where part of the placenta was left. The temperature had been down for over a week and the woman was apparently perfectly well. The doctor in charge decided to curette that part of the placenta which remained. The curettement was immediately followed by sepsis that terminated fatally within a short time. So it seems that under certain circumstances curettement may open up sepsis. He curetted to remove the placenta.

DR. JAGGARD said he supposed Dr. Earle referred to Carl Braun's practice of curettement. He did not care to discuss that subject at this meeting. Certainly, in the case presented curettement could have accomplished nothing. The poison—ptomaine, cadaveric poison, or whatever it was—had already entered the veins.

II.—DR. A. REEVES JACKSON read the following report of

A Case of Removal of the Ovaries and Tubes for Fibro-Myoma of the Uterus.

I present to the society a pair of ovaries and corresponding tubes, which were removed for the purpose of a possible beneficial influence on the hemorrhage caused by bleeding myoma of the uterus. The woman was single, about 40 years of age, menstruated first at the age of 13, and was always regular until three years ago, when menorrhagia occurred. At the same time, there appeared at intermenstrual periods—about halfway between—occasional discharges of a yellowish thin fluid. These discharges were preceded by pain in the left iliac region and some swelling. The menorrhagia increased, the other discharges continued about the same, and bleeding became so nearly constant that finally it was difficult to distinguish the menstrual period. About a year and a half before I saw her, there had been discovered a tumor in the abdomen. Ergot was then used systematically and properly, but it had no restraining influence on the hemorrhage and she became anemic, exhausted, and had nervous headaches, cardiac palpitation and loss of appetite. I found a uterine fibroid the size of an orange and suggested removal of the ovaries, although she came for the purpose of having the uterus removed. The operation was performed at the Presbyterian Hospital three weeks ago. The left ovary was exceedingly small with no trace of recent ovulation; the tube was enlarged and contained a small amount of yellowish fluid. Possibly this condition of the tube, with the previous history of occasional swelling, may have indicated that the latter was from hydrosalpinx. Here are the specimens. The right ovary was enlarged and the tube normal in structure. There was a Graafian follicle which had just broken. She had menstruation two weeks before and the condition of this follicle seemed to indicate that it had no temporal relation to that menstrual period. The highest temperature was 100.1° F., and was reached on the fourth day. The woman is now entirely well, is sitting up, and will probably be able to go to her home, a hundred or two miles distant, in the coming week. Hemorrhage appeared on the third day after operation and lasted thirty-six hours. It was then checked by vaginal tampons. She has had no discharge of blood since that time. What effect the operation will ultimately have upon hemorrhage and growth of the tumor cannot be determined at this stage of the history.

III.—DR. CHRISTIAN FENGER made the following remarks on

The Operative Treatment of Retroperitoneal Cysts in Connection with Mikulicz' Method of Drainage.

It is not my intention to-night to give an exhaustive review of the entire subject of retroperitoneal or parovarian cysts, but I merely wish to call attention to the subject for discussion, giving some of my own experiences, with a view of bringing out those of other Fellows of the Society.

The subject is that of so-called parovarian cysts, or cysts of the broad ligament, or cysts with fimbriated ephithelium, and I wish to call attention to a few facts concerning them before showing specimens.

We know that these cysts are said, in a great majority of cases, to

develop from the parovarium, the rudimentary sexual remnant of the Wolffian bodies; more rarely, they are said to develop from the epoöphoron; finally, it is possible that cysts of the broad ligament may originate from hæmatomas.

The canals of the parovarium, being lined with fimbriated epithelium, may account for the fact that the inside of a number of these cysts is found to be lined with this form of epithelium.

Parovarian cysts are typically mono-cysts. In this respect they differ materially from proliferating cystomas or other ovarian cysts developed in or into the broad ligament. Both classes are retroperitoneal cysts, inasmuch as they are situated behind the peritoneum of the posterior wall of the abdomen, but the cysts of ovarian origin are more likely to have only a partial retroperitoneal or intra-ligamentous development; that is, part of the tumor within, part outside of the broad ligament; whilst the parovarian cysts proper are more likely to be completely surrounded by the broad ligament. From the broad ligament, and separating its two layers, they commonly develop inward to the sides of the uterus and downward toward the bottom of the small pelvis.

They are usually thin-walled, lined with fimbriated epithelium or mixed fimbriated and common cylindrical epithelium; consequently their interior surface is smooth, and they contain a thin, colorless, clear fluid of low specific gravity, with no formed elements. Between the peritoneal covering and the cyst-wall there is usually a layer of loose connective tissue with but few vessels; which explains the facility with which these cysts may sometimes be separated from the broad ligament covering them, and enucleated without the use of cutting instruments, and with very little harm.

A typical cyst of this kind should have the Fallopian tube on its outside stretched out and flattened, because the cyst develops into the little mesentery of the tube. In the same way the ovary is found stretched out and flattened on the outside of the cyst near the tube. Exceptions to these common anatomical characters, however, are found. The cyst-wall may be thick, may become the seat of secondary growths, such as papillæ or papillomatous fimbriated tumors, which, having developed on the inside of the cyst, may perforate the cyst-wall, protrude on the outside, and take upon them a malignant or semi-malignant character, invade the general peritoneal cavity, giving rise to multiple metastatic papillomas.

In cases of this kind, the contents of the cyst is not a thin, clear, serous fluid, but resembles more or less the fluid of the ovarian cystomas, with numerous formed elements, viscid character, and hæmative or blood mixed with it.

The connective tissue layer between the cyst and the broad ligament may not be loose and deficient in vessels, but is sometimes so tense as to make separation of the cyst here almost or entirely impossible, and it may contain numerous large vessels.

As to the symptoms: The cysts usually grow slowly, and do not cause any inconvenience unless they reach a very considerable size. They are

usually not very tense. The fluctuation is very distinct and superficial. When such a mono-cyst is large, the abdomen is likely to be flat when the patient is recumbent, as in ascites, and the percussion note is apt to change somewhat with the position of the patient, thereby sometimes making the differential diagnosis still more difficult.

The parovarian cysts are likely to burst spontaneously, but the contained fluid is so little irritative in character that peritonitic symptoms rarely follow, the thin, clear fluid being absorbed quickly and readily.

On this account, these are the cysts of the abdominal cavity which best permit of puncture or aspiration, as these trifling operations are not uncommonly followed by radical cures.

In this connection I will describe a case which came under my observation in 1884. A girl 18 years of age came to me from Racine, who had a cyst extending above the umbilicus, and about the size of a uterus in the seventh month of gestation. She had been accused by her relatives of being pregnant, but, knowing this was not the case, came on here.

On examination I found the uterus of normal size on one side of the cyst, and in my office, with a common hypodermic syringe, I drew off and took away for examination a perfectly clear fluid, and told the patient to come down for operation. She went home to make her arrangements, and came down a month later. The cyst had entirely disappeared, without symptoms of peritonitis.

In a case like this there may, of course, be a doubt as to the correctness of the diagnosis of a parovarian cyst; but it is reasonably certain that this was the case, as one of the characteristics of this class of cysts is that rupture into the peritoneal cavity causes no peritonitis, and the fluid is absorbed without difficulty.

The method of operating on these cysts we owe to Dr. Miner, of Buffalo, N. Y., who published in 1869 his operation by enucleation.

The surface of the tumor, or, rather, the broad ligament, when exposed after the opening of the abdominal cavity, is incised down to the wall of the cyst. In the loose connective tissue layer the broad ligament is now separated from the cyst-wall. By means of the fingers or blunt instruments this separation can be continued, without the use of any force and without appreciable hæmorrhage, until the cyst is completely enucleated, and may be lifted out of the cavity. Evacuation of the cyst fluid after partial denudation of the wall, as a matter of course, facilitates enucleation.

In some cases of parovarian cysts, the development is to such an extent peripheral in the broad ligament that the uterine half of the latter is long enough for the formation of a pedicle. In such cases the usual operation for ovarian cysts may be performed at a sacrifice of the covering broad ligament, with tube and ovary. But such a peripheral development is not the rule, and whenever the cyst is developed down upon the uterus or into Douglas' fossa, or farther away still in the retroperitoneal space, enucleation is the only method available for its complete removal.

Difficulties during the course of enucleation arise when the connective

tissue is tense and rich in vessels, necessitating dissection with the knife, and numerous ligatures. Further, if a large cyst develops deep down in Douglas' fossa or even behind the rectum, or up into the mesenteries of the intestines, sigmoid flexure, or descending colon on the left side, or cæcum or ascending colon on the right side, we may find in such cases, smaller or larger portions of these intestines spread over the surface of the cyst longitudinally and transversely, just the same as the Fallopian tube. It may be difficult, almost impossible, to remove the cyst-wall from the intestines in such cases, and danger may arise from the fact that the intestines will not bear denudation of the muscular layers to any extent, as it easily becomes gangrenous.

The first case I met with was that of a married woman, 22 years of age, from Racine, who had a cyst which had been developing for two years. It was as large as a gravid uterus at term and contained a clear fluid. When the abdomen had been opened and the covering broad ligament had been incised down to the cyst-wall, I commenced dissection with a view to enucleation, but after working about half an hour dissecting and ligating vessels, I had advanced but very little. All that I could get out of the cyst was a piece as large as the palm of the hand. Consequently I was obliged to leave the cyst, after having united the opening into it with the abdominal wound and made use of a method of drainage which I had intended to speak of this evening—the so-called Mikulicz drainage. The patient made a good recovery.

About a year ago, Mikulicz, of Cracow, proposed the following method of drainage, not only for retroperitoneal cysts, which can be excluded from the general peritoneal cavity by uniting them to the abdominal wound, but also for drainage in the peritoneal cavity itself. He takes a small piece of iodoform gauze, stitches a silk thread to the center of it, and folds it up in the form of a pouch, the silk thread being inside, so that the pouch may be drawn up from the bottom by it. The pouch is now pushed down to the bottom of the cavity, and, if nooks and corners exist, it is pushed out so as to completely fill them. In the inside of the pouch is packed with strips of idoform gauze, as much as is necessary to completely fill up these spaces. This is the advantage claimed by Mikulicz for his method of drainage as compared with the use of glass or rubber drainage.

DR. ETHERIDGE: Do you tuck that clear into the abdominal cavity—the cyst itself?

Dr. FENGER: Yes sir, down into the bottom. Besides the disinfectant properties of the iodoform gauze applied to the entire wall of such a cyst Mikulicz states as one of the advantages of his method that, by the capillarity of the gauze, everything is brought out—fluids which a glass or rubber drain could not bring out. We must remember that when we drain the peritoneal cavity with a glass drain down between the intestines or in the cavity of the cyst, we cannot always expect to get surrounding organs in so close contact with the drain as to drive the fluid out.

Further, there is this to consider; that a glass drain put down in the free peritoneal cavity has no tendency to bring out the fluid accumulated at the

bottom. The intestines filled with air will simply swim in the fluid and there is no pressure from without that will bring this fluid out of the glass drain, while the capillarity of the gauze is likely to help in that direction.

DR. SAWYER: How long could it be allowed to remain in the abdominal cavity?

DR. FENGER: I have had it remain in all these cases for about two weeks. As soon as the discharge ceases I commence first to pull out the loose gauze inside the sack. If a space is left after this has been pulled out I press in at that dressing a little more gauze. This is gradually removed and the pouch itself is then pulled out by the thread gradually and finally. In all my cases it came out about the end of the second week.

The second case was similar to the first, inasmuch as there was no possibility, at least, as far as my ability went, of getting the cyst out. It was a large cyst of eight years' development, in a woman fifty years of age, from Sioux City, Iowa. A prolapse of the uterus had developed during this time and I was able to get out of the cyst, after considerable dissection, hardly more than two square inches. I used the Mikulicz drain with the same result as before. The patient was operated upon October 31, 1886.

In the two above mentioned cases enucleation was impossible, and we, with Ohlshausen, may have to class them under unfinished operations, as far as the extirpation of the cyst is concerned. But in cysts of the broad ligament, such an unfinished operation is, as a rule, followed by undisturbed and perfect recovery, and so I feel inclined rather to classify the above named method of operating as a legitimate one for non-enucleable parovarian cysts, than to use the somewhat misleading and sinister term of incomplete operation.

The third case was a woman 50 years of age, in whom the cyst had taken three years to develop. The operation was performed February 2, 1887. The outside of the cyst looked smooth in this case because the connective tissue was so loose. It was the easiest thing imaginable to enucleate it from the retroperitoneal cavity in which it was developed. There were not two vessels to tie and this accounts for the smoothness of the outer surface. This cyst was a typically normal one of that class, as it was covered all over with the broad ligament. The fluid was perfectly clear; no remnant of a blood clot was present.

Now, when the cyst has been enucleated, the question arises what to do. I was afraid to leave this large retroperitoneal wound without drainage, so I used Mikulicz' method, and the woman is well. It is, however, a debatable question; and in the future it is probable that in a case like this drainage will not be used.

Authorities like Ohlshausen very strongly recommend, even for a cavity as large as that, not to drain at all—not even to unite the surface of the peritoneum so as to exclude the retroperitoneal wound from the general peritoneal cavity. He says that when there is no infection, no sepsis, during the operation, there will be no peritonitis, and no septicæmia afterward. He also states that he usually leaves the cavity alone after these

enucleations, and that peritonitis seldom or never follows as a consequence of the operation, nor do pelvic abscesses form.

This is where the matter stands, and these are the points for discussion. I must say that I do not dare to rely so fully on entire asepsis during the operation as to leave drainage out. Undoubtedly the recovery of the patient is quicker and easier without than with drainage, as very often, in the latter case, a fistula remains which may keep open for months.

The fourth case was an old and rather anæmic patient, more than fifty years of age, but apparently sixty. She was pale and emaciated, and had a large retroperitoneal cyst, located partly in the peritoneal and partly in the retroperitoneal cavity, or, in other words, of partly extra and partly intra-ligamentous development. As a natural consequence, the enucleation was difficult, since the peritoneal cavity was at once entered. On the inside of the cyst were papillomatous masses such as are found in smaller growths, cystomas of the ovary. These, of course, always indicate malignancy. On the inside of this cyst the surface was rough, velvety from the diffuse papillomatous condition of the entire inner wall, and in some places grown out into a large papilloma, but in no place smooth.

The operation in this case was rendered more difficult, because the connective tissue, surrounding the intra-ligamentous portion of the cyst, was comparatively tense, and, further, because it had grown up into the mesentery of the sigmoid flexure, so as to be covered by it. When the cyst was enucleated, there was a portion of the sigmoid flexure that I was afraid of.

There is one other point beside the intestines which we should be careful to avoid in the extirpation of these retroperitoneal cysts; that is, the ureters. As soon as we get into the neighborhood of the large vessels in the posterior wall, we must look carefully out for the ureters and locate them by palpation, as when the ureter is adherent to the cyst it may be easily torn.

Mikulicz' drainage was used in this case as in the others. The first three or four days she had no untoward symptoms, but on the fourth or fifth day she commenced to vomit, and became somewhat delirious and sleepy, and died, the temperature not having exceeded 101° or 102° F. I saw her the evening before she died, and expected on account of the vomiting to find peritonitis, but there were no local symptoms at all. Then I supposed it to be sepsis without peritonitis, but the autopsy showed the cause of death to be uræmia.

We found in both kidneys, from pressure of the tumor on the ureters in a state of dilatation, not exactly hydronephrosis but dilatation and subsequent atrophy, to a sufficient degree in my opinion to account for uræmia; for we know that patients with so much degenerative disease of the kidneys of any kind as to almost reach the limit of secreting tissue, are apt to get uræmia after operation. Whether the operation, or the anæsthetic is the cause, I cannot say, but it is a well-known fact.

After the opening of the abdominal cavity, Mikulicz' drain was laid down right between the loops of intestine, and, of course, a local but aseptic peritonitis formed along the drain. You will notice on the specimen I now

present the impression of the meshes of the tissue of the drain, but outside of this a perfectly clear and smooth peritoneum.

As I remarked before, the chief point for discussion is the drainage. Ohlshausen does not drain in any such cases. This may be thus explained: He says that in many cases of this kind it is impossible to finish the operation. If we accept his classification, two of my cases would be termed unfinished operations; but I am certain that with an unfinished operation and a Mikulicz's drain a radical cure may be effected just as well, perhaps, as if the cyst had been taken out. This, of course, would apply only to a thin-walled cyst of a malignant character.

DISCUSSION.

DR. A. REEVES JACKSON: If I remember correctly, Dr. Miner's discovery or suggestion in regard to enucleating tumors was not originally for the purpose of removing only sub-peritoneal cysts, but to make possible the removal of ovarian and other tumors in which the adhesions were so extensive as to make it impossible to remove them in any other way. I think his first case one in which he failed to find a pedicle and so was driven to enucleate. I think he removed very few tumors in this way, because he did not find the necessity for doing it. But when adhesions were so extensive and tense that it was impossible to remove the growth, he made a slight incision around its lower portion, and then, seizing it above, after emptying the cyst, he passed a finger or suitable instrument around until he had loosened all the attachments. It was a valuable suggestion, and operators have availed themselves of it in suitable cases.

In regard to the removal of these sub-peritoneal cysts, one of the cases related by Dr. Fenger shows clearly that the operation of enucleation is not always necessary. The tapping was followed by complete cure. Tapping has frequently been successful and these are the cases in which it is the proper method of treatment. I am aware that many hold a different opinion and advise extirpation always. If the tumor should refill after tapping and the patient's health fail, I should be in favor of removing the cyst by ordinary methods.

In regard to Mikulicz' plan of drainage, it has always seemed to me that it could only succeed in removing the thinner parts of the fluid; the more dense constituents could not be carried away as well by this method as by a tube of glass or rubber. I can see an objection to it in the possibility of a long convalescence resulting from the large fistulous opening which might be left, and which would be embarrassing for months.

In the last case detailed by Dr. Fenger, we have an illustration of the importance of knowing the condition of the kidneys before operating for any abdominal tumor of long standing. Many operators make it a point to know that the patient passes a sufficient quantity of urine of a proper character before consenting to operate. They insist on knowing that the kidneys can do their work, and the rule is a good one.

DR. CHRISTIAN FENGER: In regard to the remarks of Dr. Jackson, about the insufficiency of the Mikulicz' drain, I will say that I forgot to

state that I do not use it now, without at the same time inserting in the center of it a glass or rubber drain. In an operation last Autumn, in which I used the Mikulicz drain without a glass drain, I found the outside dressing dry and still about a pint of fluid at the bottom of the abdominal cavity after the patient was dead; so since that time I have always inserted a glass or rubber drain in the center of the Mikulicz drain.

As to the remark regarding the examination of urine: Of course we always do this. In this case there was no albumen, but I cannot say that it was examined as to quantity.

In reply to the question of Dr. Jaggard as to whether I have used the drain in pelvic abscess and acute suppurative peritonitis: I have not used it in pelvic abscess, but have used it in tuberculous peritonitis, in a case last fall which looked like a tumor. There was tuberculous peritonitis with a large localized cavity or space filled with a fluid more or less serous. I used the Mikulicz drain with a glass drain, and the patient was still alive two or three months ago, and I do not know whether the drain is out yet. I have used it in other cases which show its efficiency. In a case of chylous ascites that had been tapped and tapped and had refilled, and in which laparotomy had been performed the year before and still it had filled again, I opened and drained the peritoneal cavity, and used the Mikulicz drain with a glass tube with perfect success. I always use it in acute peritonitis, and see no reason why it should not be used in peritonitis as well as in other cases. At the time Mikulicz published his paper on this form of drainage, it was only in peritonitis that he had used it.

In regard to the similarity between labor and operation, as far as the question of eclampsia is concerned: That is one of the subjects which was brought up for discussion in the *Berliner Kleinsche Medicinische Gesellschaft* last fall, between Leyden and Virchow, in which no definite conclusion was reached.

I fully agree with Dr. Etheridge that vaginal drainage, mechanical of course, is the most rational method because it draws best. My own experience is limited as I have only employed it twice, and both patients died. We dread the vagina as a septic cavity and the reason why we should not drain through it, is fear of sepsis from the vagina up into the abdominal cavity. But I believe with our new precautions the vagina could be kept so aseptic that retrograde sepsis from it could be prevented. I believe also that vaginal drainage ought to be used more than it is, and that we need not be so afraid of it as we are.

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ABSTRACTS AND EXTRACTS.

CONCERNING THE PRESENT STANDING OF THE WATER TREATMENT OF TYPHOID FEVER. *By* DR. ERNST BRAND, Stettin, Germany. (*In Deutsche Medicinische Wochenschrift, Nos. 1 to 11 inclusive.*)

In the *Berliner Klinische Wochenschrift*, of November 9th, 1885, Senator of Berlin said that the so-called water treatment, or "method of Brand," of typhoid fever, was not only not in use in any Berlin hospital, but also that as a method of treatment it produces no conclusive results. It has been condemned also by Leyden of Berlin, Gläser of Hamburg, and Ebstein of Göttingen. The *Gazette Hebdomadaire*, of January 15th, says, "The method of Brand in the treatment of typhoid fever has fallen into disuse among the German physicians." The author thinks all this calls for a defense of the treatment assailed, and he proposes to "break a lance" with the gentlemen named in behalf of his method.

The articles contributed are so voluminous and the style so discursive that great condensation is necessary in this abstract, but an earnest attempt is made not to omit any matter essential to the argument of the author.

"The ground upon which the gentlemen named base their conclusion is that, according to their experience, the very troublesome treatment by baths gives no better results than the expectant treatment gives. Ebstein (*Die Behandlung des Unterleibstyphus*, Wiesbaden, 1885,) with the expectant treatment lost 13 in 225 cases, or 5.5 per cent. Gläser

(*Berliner Klinische Wochenschrift*, 1885, No. 12) reports from the Hamburg hospital a mortality of 7 per cent. with expectant, and of 8 per cent. with the water treatment, and (*Deutsche Medicinische Wochenschrift*, 1885, No. 12) 102 cases treated "without water or other antipyretics" with 3 deaths.

Senator (*Berliner Klinische Wochenschrift*, 1885, No. 45) reports the mortality in the Augusta hospital with the expectant treatment, without baths or antipyretics, as 12.3 per cent.; and in the Bethany hospital, and in the Moabite military hospital, with energetic use of water and antipyretics, as 13.5 per cent. and 15.2 per. cent. respectively.

Under the expectant method the following mortality occurred, viz., With Liebermeister, 27.3; with Griesinger, 18.9; in Kiel, 15.6; in Leipzig, 18.5; in Vienna hospitals, over 20; in Dresden, 13; in Strasburg, 23; in Paris 32; and during the siege of 1870–71, 60.8 per cent.

The author claims that the expectant method remains what it always has been, and he gives the following from Ebstein as illustrative: "Calomel as abortive treatment; against the development of typhoid, careful diet, good surroundings, cleanliness, fresh air, wine, hydrochloric acid, with and without quinia; against the temperature, accompanied by grave brain or heart symptoms, salicylic acid; against heart failure, wine, cognac, camphor; against bronchial and lung affections, 'Flores benzoës' and preparations of ammonia; against the stupor, musk, cold frictions, and an ice bag to the head." Ebstein's diet list comprises milk, meat broths, meat extracts, yolk of the egg, liqueurs, coffee and spirits.

"In Hamburg under the expectant treatment the mortal-

ity in typhoid fever was 19 per cent., and under the administration of Gläser it has recently fallen, under both expectant and so-called water treatment—both with and without medicine, to 3.2 to 20 per cent. In Göttingen, prior to 1861, under expectant treatment it was 25 to 33.3 per cent. Under timid water treatment—one bath daily—it ranged from 3.2 to 20.2 per cent.; and now under Ebstein's expectant treatment it stands at 5.5 per cent."

The author claims that after a careful examination of the communications of Gläser and Ebstein, since the surroundings and service are the same as formerly, one is forced to the conclusion that the lessened mortality reported by these gentlemen is due simply to their increased skill in the management of the expectant method. Ebstein reports 222 cases of recovery as of great or moderate severity, and of these, intestinal hemorrhage in 4.9 per cent. against 5.6 per cent. formerly; pneumonia in 2.7 per cent. against 20 per cent. formerly; ulceration from pressure of decubitus, 1.8 per cent. against 10 per cent. formerly. The average duration of the stay in the hospital was twenty-nine days, and during the seven years from 1877 to 1884 there was no death from typhoid fever in the Policlinic at Göttingen.

Gläser replies in a somewhat irritated tone to the remark, by Mayer in Aachen, that typhoid fever in Hamburg is of a mild variety, and reports a series of 102 cases with their complications, treated "without water or other antipyretic measures."

"In the following table I arrange these cases and remarks upon the complications in parallel columns:

Gläser's 102 cases.	*Comments.*
1. Average stay in the hospital, 49 days. Average duration of the fever, 18 days.	1. Both stand in marked contradiction. The duration of the fever is that of light cases (sixteen days according to Jürgensen); the stay in the hospital is that of severe cases (forty-four days is the average in military hospitals; thirty-seven that of clinical institutions).
2. A temperature above 41° C. (105.8° F.) twice, or 2 per cent.	2. In 100 of my non-selected case-histories I find 22 with a temperature over 41° C. (105.8° F.), 3 over 42° C. (107.6° F.), without death or other significant result.
3. A pulse of 144, 5 times.	3. A common occurrence in nervous anæmic and protracted cases of typhoid fever.
4. Ulceration from pressure of decubitus, 1 per cent.	4. Formerly 9 per cent.
5. Recurrence, 1 per cent.	5. Formerly 8.6 per cent.
6. Pneumonia, 11 per cent.	6. Formerly 20 per cent.
7. Pleuritis, 3 per cent.	7. Formerly 3.6 per cent.
8. Intestinal hemorrhage, 6 per cent.	8. Formerly 7.3 per cent.
9. Profuse diarrhœa 3 times, and tympanites 2 times.	9. In every case of developed typhoid tympanites is never absent, and profuse diarrhœa is a common complication.

In the light of such statements it must be admitted that the Hamburg cases are light ones. This conclusion gains additional confirmation from Gläser's statement that his typhoid cases have "'quiet-blessed' sleep," for it is true the world over that under expectant treatment, stupor, somnolence, coma or delirium or phantasy are common.

What Gläser and Ebstein call energetic hydrotherapy is by no means such. According to Gläser it consists in the administration of baths at 16° R.; (60.8° F.) during the time from 7 A. M. to 9 A. M., whenever the temperature of the body reaches 39° or 39.5° C. (102° to 103°), no baths at night. At Göttingen baths of ten minutes' duration from 26° to 28° R. The number of the baths during the entire course of the fever was, 1860–1863, to each patient, 8 to 10; 1863–1868, 15; 1868–1872, 30 to 35; that is, not more than one bath daily at any time. In the Moabite (Berlin) military hospital, together with quinine and other an-

tipyretics, baths at 22° R., cooled to 18° R., continued 10 to 15 minutes. In cases of children and those of feeble constitutions, 27° R. cooled to 20° R. Never more than 4 baths in the 24 hours, and this only in cases of specially high temperatures, otherwise 1 to 3 daily. In the Bethany hospital (Berlin), in cases of temperatures of 39.5° C. (103° F.) ice bags are applied to the head, and ten-minute baths at 24 to 20° R. are given 3 or 4 times daily, none at night.

For the expectant treatment Murchison gives a long list of indications; for the "water treatment" there is only one, viz., to prevent and reduce every exacerbation of the fever from the beginning to the end of the fever, day and night. This indication announced by me years ago obtains to-day.

The following arrangement in parallel columns will show the difference between the so-called antipyretic and hydrotherapeutic methods of treatment:

Hydrotherapeutic.	*Antipyretic.*
1. The severe cases of typhoid will be changed in all respects to lighter ones, and those of mild grade become less severe.	1. A change into a typhoid case free from fever, i. e. without temperature increase, without regard to functional disturbance.
2. *This happens*—	2. *This happens*—
a. Through prevention of every increase of temperature, and the gradual establishment of a temperature near the normal.	*a.* Through diminution of excessively high temperatures.
b. Through prevention of functional disturbances of the organs.	*b.* Through a change from continued and subcontinued fever to a remittent type.
c. Through a diminution and suppression of the process.	
d. Through a preservation from complications.	
3. Every 3 hours a bath at 15° R. for 15 minutes, and whenever the temerature is above 39° C. (102°.2 F.).	3. *Formerly*, baths whenever body temperature was 40° C. (104° F.), and every other evening an antipyretic. *Now* an antipyretic in the evening, and during the night baths frequently enough to keep the temperature nearly normal; during the day nothing, or at lease a bath only in cases of unusually high temperature.
4. The treatment is directed against the process as a whole.	4. The treatment is directed against one symptom, the fever.

5. Baths are used exclusively.	5. Baths and antipyretics are used.
6. Mortality. When the treatment is begun early and regularly carried out the mortality will be: In family practice—1 per cent. In general practice—3 to 4 per cent. In military hospitals—4 per cent. In general hospitals—5 per cent. without special change.	6. Formerly 0 to 23 per cent. with an average of 7 to 8 per cent. Now, 10 to 18 per cent., with marked diminutions.

One sees at a glance that the two methods have only the baths as a common feature.

The author calls attention to the fact that fifteen years ago he denied that the treatment by baths in vogue at Berlin and Hamburg had any influence upon the course of the disease or upon its mortality. He says that Gläser is correct in claiming that his (Brand's) method of hydrotherapeutic treatment gives uncertain results in mortality, but asserts that this uncertainty is inherent more in the nature of the case under treatment than upon the method employed. A list of fifty-eight communications concerning typhoid fever is given which appeared between 1878 and 1886.

Those who favor the antipyretic method claimed that the antipyretic effect is the only good thing accomplished, and the author thinks that the water treatment has consequently, because it requires so much work, fallen into disuse. He thinks this claim unsupported by facts, and proposes to answer the question, "What is the systematic hydrotherapeutic treatment of typhoid fever worth, and has it achieved what was claimed for it?"

In answer to this question the following facts are given:

The cold-water treatment of Brand is in use throughout the Prussian army and the 13th (Würtemburg) army corps. The mortality in typhoid cases was: 1874, 12 per cent.; 1875, 10.9 per cent.; 1876, 10.8 per cent.; 1877, 9.8 per cent.; 1878, 8.9 per cent. The Sanitary Department reports

that from 1887 to April 1, 1882, at Stralsund, under Brand's method of cold baths, only one death occurred.

The mortality in the entire German army from typhoid fever was in 1881, 8.3 per cent.; in the Italian (1874–78), 28–36.8 per cent.; in the Austrian (1873–78), 26.8 per cent.; in the French (1875–80), 36.5 per cent. Dr. Paul Helm reports concerning the treatment of typhoid fever in the military hospital at Stralsund, under Ziemsen's method (1873–77), a mortality of 10 per cent.; under Brand's method in 247 cases, only one death, and that case came under treatment on the fourteenth day of the illness.

Vogl, in Munich, says (*Deutsches Archiv für Klinsche Medicin Bd. XXXVI. Heft 5u. 6.*): "The average mortality under the Brand method of treatment is 2.7 per cent. The greatest mortality in any one year is 4.7 per cent." The following table is from Munich, where typhoid cases have been treated at different stations, according to the methods of Liebermeister and Brand, but with other conditions as nearly the same as possible:

PERIOD.	NO. OF CASES.	PERCENTAGE MORTALITY.	TREATMENT.
1875–6	76	15.8	Liebermeister.
	66	4.5	Brand.
1876–7	194	6.7	Liebermeister.
	141	3.5	Brand.
1877–8	77	3.8	Liebermeister.
	56	0.0	Brand.
1878–9	115	6.1	Liebermeister.
	92	15.2	
1879–80	110	10.8	Liebermeister.
	98	3.9	Brand.
1880–1	16	18.8	Liebermeister.
	25	4.0	Brand.
1881–2	22	9.1	Liebermeister.
	42	4.7	Brand.

In the total number of cases the percentage of complications under the Liebermeister treatment was 102 per cent.; under that of Brand, 65.2 per cent., as follows:

	Brand.	Liebermeister.
Pleuritis	1	16
Delirium	6	93
Involuntary Evacuations	1	18
Bloody Stools	2	21

Under the Brand treatment there was absolutely no pneumonia, disturbance of hearing, vomiting, stupor, muscular tremors, convulsions, suppression of urine, catarrh of the bladder, peritonitis, or perforation.

Vogl further says: "Among the thousands of baths I have never, either before, during, or after the administration of the bath, seen a single case of collapse." He says, also, that whereas formerly there were many cases of general disability following typhoid fever, since the adoption of Brand's method (1876), he can remember only three such cases. He thinks that pulmonary complications, when present, do not contraindicate the baths. The author claims that Vogl supports him in every point which he claims for the exclusive hydrotherapeutic method.

Jürgensen is the director of the Policlinic at Tübingen. From this clinic Betz (*Ueber Typhus Abdominatis, Dissertationsschrift, Stuttgart, 1885*), reports 220 cases of typhoid fever, with 4 deaths, or 1.8 per cent. Of these fatal cases 2 had no baths and 1 was treated principally by antipyretics. Jürgensen is of the opinion that the treatment by baths retards the development of the bacillus of typhoid fever. At this clinic diarrhœa and intestinal hemorrhages are not considered contraindications for the continuance of the cold baths. Jürgensen said at the Congress in Wiesbaden, 1882, "I think that the water treatment must be considered the best, and that no other antipyretic method can at all compare with it."

Liebermeister said (*Congress für Internal Medicin, 1885*): "Antiseptics have made an epoch in surgery and saved countless lives. I think that when the antipyretic treatment is once completely established, it will save still more lives."

Among French authors Glénard, Tripier and Bouveret are mentioned as champions of the Brand method. Tripier and Bouveret have published a book of 635 pages, entitled, "La fièvre typhoïde, traitée par les bains froids" (Paris: Bailière et fils. 1886). The observations are based upon 233 cases treated from 1874 to 1885, partly in Hôtel-Dieu, and partly in Hôpital de la Croix Rousse, in Lyons. These cases were selected from among those in the hospital as the most severe, and were treated without any medicine, and the method was at first imperfectly carried out. Under these unfavorable circumstances the mortality was 8.5 per cent. The mortality in 1882–3 was 5 per cent. The authors agree with one another on the following points: In order to get the best results the baths must be commenced upon the first day of the fever. There is no danger at all of the patients taking cold. In order to get the best results the method must be carried out in its minutest details. The author remarks that this last observation is prompted by his own experience. While it will be found that the temperature tends to rise after the bath to the former temperature, it will also be found that, after a few baths, there begins a gradual decline in the average temperature for the day.

Tripier and Bouveret found that delirious headache and mental irritability rapidly disappear. They consider the cold bath a heart tonic. They say: "The method of Brand increases the energy of the heart and the tonus of the vessels, and prevents the occurrence of paralysis. In severe cases the pulse was not above 120. Dicrotism did not appear in cases which came under treatment early in the attack, and in others it disappeared."

Tripier and Bouveret think that the influence of the cold bath is favorable in preventing and arresting bronchial catarrh

and pulmonary hypostasis. In Germany pneumonia is only occasionally a complication, but in France it is the most frequent cause of death. Tripier and Bouveret consider severe pulmonary complications contra-indications for the cold baths, but stop them only when pneumonia occurs very late in the illness, and is accompanied by extreme adynamia and cardiac weakness. In this connection Bouveret refers to and confirms Jürgensen's remark, "He who has fever does not take cold." In the experience of Tripier and Bouveret diarrhœa ceased on the seventh or eighth day, and in cases treated from the beginning it did not occur; tympanites was not present, and the amount of urine was 2 to 4 times as much as it was in cases treated with medicines. Bouveret thinks that in cases in which the Brand treatment is begun before the fourth day, there will be no intestinal ulcers, and bases this opinion upon the following observations:

1. Cases treated from the beginning show absolutely no signs of ulceration.

2. The results of intestinal ulceration, hemorrhage and perforation, do not occur.

3. The statistics quoted show that intestinal hemorrhage occurs only in those cases which come under treatment late in the illness.

4. Pathological anatomy shows that the intestinal lesion by no means always goes on to ulceration, but in cases of middle grade of severity only to infiltration.

Vogl gives the following table:

COMPLICATIONS.	METHOD OF TREATMENT— EXPECTANT.	LIEBERMEISTER.	BRAND.
Severe bronchial affections	25.0 per cent.	16.6 per cent.	9.5 per cent.
Ulceration from decubitus	10.0 "	2.6 "	2.7 "
Severe brain symptoms	25.0 "	5.2 "	0.9 "
Intestinal hemorrhage	5.6 "	0.3 "	0.0 "
Peritonitis and perforation	9.0 "	0.5 "	0.0 "

Vogl is the only one who has reported ulceration from decubitus in cases treated by the method of Brand.

He considers the cold baths contra-indicated by the following conditions:

1. Cases requiring absolute rest from peritonitis, with or without intestinal perforation, late intestinal hemorrhage, venous thrombosis—conditions, however, which he has not seen in cases treated by Brand's method.

2. Affections of the larynx and pleura Tripier and Bouveret class as primary contra-indications for the use of the cold baths:

1. Peritonitis and perforation.

2. Severe intestinal hemorrhage occurring late.

3. Pericarditis and pleuritis occurring toward the close of the illness.

They think, however, that we should endeavor to decrease, rather than increase, the number of contra-indications. The author agrees with Glénard in thinking that the baths should be continued in cases of intestinal hemorrhage in which the temperature is over 39° C. (102.° F.). "In my opinion the contra-indications are, upon the whole, simple. So long as one is not in possession of a medical procedure that gives safer results than does the water treatment, this should always be used. No obstacles should be allowed to prevent it, particularly since they are usually imaginary and their removal presents no difficulties." By way of explaining what are usually considered indications, contra-indications and conditions which are usually considered objections to the employment of cold baths, the author at this place in the discussion gives brief statements of a few cases recently encountered by him. These cases came from all classes of patients, and include intestinal hemorrhage, great cardiac weakness and pulse frequency, alcoholic excesses, poverty, and one case complicated with pregnancy,

pertussis and vomiting, all making good recoveries, sound living children being born in the pregnant cases. In recapitulation, the water treatment, administered according to my directions, gives the following results:

"1. Not only the possibility of preventing each exacerbation, but also the conquering of the fever *in toto* and its causes.

"2. The prevention of functional disturbances of the brain, heart, lungs, kidneys and skin.

"3. Prevention of intestinal catarrh and the giving of complete nourishment.

"4. Prevention of intestinal ulceration in those cases treated from the inception of the attack.

"5. A prevention of complications in cases treated from the beginning, and a diminution in those coming under treatment late in the attack."

Upon the whole, under the systematic water treatment, there remains of the usual typhoid fever picture only: *a.*—A light fever; *b.*—an unimportant bronchial catarrh; *c.*—a swelling of the spleen; *d.*—the roseola; *e.*—the infiltration of the intestinal glands. All else will be controlled, prevented, and the severest case will run the course of the lighter ones when the treatment is given from the beginning.

One may compare this powerful effect of the systematic treatment of typhoid fever with cold baths with that of the Lister treatment of wounds, in securing primary union. A few years ago both were considered impossible and therefore not believed. With regard to antiseptics this is changed, but with the water treatment not completely.

The consideration of the effect upon the rate of mortality is not so pleasant, because statistics are misused and much is thus brought into contempt.

In the year 1877 I reported in the second edition of my

monograph 8,141 cases treated with the hydrotherapeutic method, with a mortality of 7.4 per cent. Now the number of cases is 19,017 and the mortality 7.8 per cent.

	CASES.	DEATHS.	PERCENTAGE.
a. Prior to 1877	8,141	600	7.4
b. Military Hospitals—			
1877	2,081	206	9.8
1878	2,112	190	8.9
1879	1,741	163	9.4
1880	2,534	226	8.9
c. Military Hospitals—			
2d Army Corps—			
1882-3	477	17	3.5
1883-4	429	28	6.5
1884-5	392	14	3.5
1885-6	188	6	3.1
d. Jürgensen (Tübingen)	220	4	1.8
e. Vogl (Munich)	221	6	2.7
f. Tripier and Bouveret	481	29	6.
	19,017	1,489	7.8

By the introduction of statistics from Liebermeister, Ziemsen, Hagenbach and others, this number might be considerably increased, but they all use antipyretics, and the number is already large enough for the purposes of this article. It must be remembered that these 19,017 cases include all primary and secondary complications, all ages, both sexes, epidemic and sporadic, benign and malignant cases, hospital and private practice, and that of civil and military, of war and peace, and all circumstances which modify the nature and course of typhoid fever. And the treatment, too, while in the main the employment of cold baths, is not the method of Brand, but rather such modifications in each case as suited the individual clinician reporting. The following cases, which are available for use, are partly from my monograph, and partly new:

	CASES.	DEATHS.	MORTALITY
1. Wiedner	20	00	0.0 per cent.
2. Winternitz	86	2	2.3 " "
3. Cayla	63	4	6.3 " "
4. Jürgensen (Kiel)	160	5	3.1 " "
5. Opitz	66	0	0.0 " "
6. Scholz	125	5	4.0 " "
7. Popper	20	1	5.0 " "
8. Riegel	156	7	4.4 " "
9. Stöhr	120	8	6.6 " "
10. Leichtenstern	373	21	5.4 " "
11. Rollet	126	4	3.1 " "
12. Hayfelder	21	0	0.0 " "
13. Pfeifer	58	3	5.2 " "
14. Jürgensen (Tübingen)	220	4	1.8 " "
15. Tripier and Bouveret	233	20	8.5 " "
16. Ballivet (Thoiry)	73	3	4.1 " "
17. Rondet and Grabinisky (Curis)	11	0	0.0 " "
18. " " " (St. Germain)	33	0	0.0 " "
19. " " " (Neuville)	122	6	4.9 " "
20. Glénard	56	1	0.5 " "
21. Vogl	221	6	2.7 " "
22. Garison Hospital II. Army Corps, 1882-5	2711	117	4.3 " "
23. Brand (entire practice)	479	17	3.5 " "
	5573	234	3.9 per cent.

A few of Jürgensen's cases reported above may have had occasionally other treatment in addition to the baths, but all of the others had systematic water treatment. Hence we may say that the mortality is from 4 to 8 per cent. instead of 16 to 20 per cent. under the expectant treatment. In this table the mortality above 4 per cent. is not due to the inefficiency of the hydrotherapeutic treatment, but to special circumstances. To illustrate, Tripier and Bouveret report that during the first two years they subjected only the most severe cases to the water treatment, and also did not carry it out fully. They say that they will not again have to report a mortality greater than 5 per cent., and in fact M. Tessier (*Lyons Medical, No. 32*) reports 139 cases with 7 deaths, or 5 per cent. In my opinion the mortality at Lyons will be still lower if they will diminish the number of contra indications, and will treat the complicated and severe cases according to my plan. There is always a risk, since there is occasionally a case which will prove fatal if the treatment is not begun at the beginning of the attack.

Popper, Stöhr, and Leichtenstern report a mortality over 4 per cent., but their statistics date from a time when the treat-

ment and nourishment were not so precise as they have been since 1877.

The mortality of the second army corps is 4.3 per cent., but for the entire German army for the same period it is 8.3 per cent. In the second army corps the diagnosis of typhoid fever is never made, unless, in addition to the characteristic symptoms, the fever lasts sixteen days, and cases are not considered severe unless the fever lasts twenty-one days and is over 40°C. (104°F.). In this corps the mortality from 1882 to 1886 ranged as follows: 1882–3, 3.56 per cent.; 1883–4, 6.53 per cent.; 1884–5, 3.57 per cent.; 1885–6, 3.19 per cent. A basis for the statement that a morality of 4 per cent. is too high lies in the fact that statistics are incorrect, many of the cases reported either never having had a drop of water used in the treatment or having died before the use of the baths had time to produce its characteristic effect. Numbers 2 and 10 in my own death list belong in this category. No. 2 had received only one bath, and No. 10 died under the care of another physician during my absence.

Of Jürgensen's 4 fatal cases 3 were not bathed at all, and among the 6 deaths in the Pomeranian military hospital (1885–6) 2 were treated exclusively with antipyrin. One must not forget that under any method of treatment a very great number of cases of typhoid fever in succession will recover, and consequently one must avoid the *post hoc ergo propter hoc* fallacy.

In those cases in which a predisposition to complications exists, or in which indeed the complications already exist, the treatment has nothing whatever to do with the typhoid fever, but rather with the croupous, diphtheritic, pyæmic or septic processes, all of which have special indications of their own. I want to make this condition clear, since otherwise an intelli-

gent judgment of the water treatment cannot be arrived at. The idea that complicated and degenerated (*sic*) cases are the ones with which to test the treatment is incorrect, for with such cases a special treatment for the typhoid fever has nothing to do. That in such doubtful cases the water treatment, according to other indications, may be of assistance is a topic for separate consideration, and is discussed in my monograph.

The establishment of a light course in every case of typhoid fever is the object of the systematic water treatment, and that no death occurs is the proof that the object is accomplished. In my opinion that is a demonstration so safe and radical that no one can have aught against it. It is to be expected that one may say, "You go too far," but on the contrary we can not go too far in this treatment of typhoid fever.

In the use of statistics in this connection it is necessary:

1. That the number of observed cases must be as great as possible, including many hundred.

2. That they must be included in a period of many years.

3. That both sexes, all ages, social conditions, constitutions and temperaments, must be included.

4. That so far as possible all primary complications must be present.

5. That the cases must come under treatment at the beginning of the attack, and be treated regularly and systematically.

For this purpose hospital statistics are not suitable, because the cases are not treated from the beginning of the attack. The most suitable material is furnished by the so-called house-physician practice (*hausärztliche Praxis*), that kind of practice in which the physician is employed not only to treat disease after it is developed, but also to prevent its occurrence. In such a practice the cases are seen at the very outset of the attack.

As an exception to all others, Jürgensen's policlinic in Tübingen furnishes substantially these conditions. The military hospitals occasionally furnish statistics of high value. Those of Vogl are especially trustworthy. The following table is composed of the only reliable reports given in the preceding long list:

	CASES.	DEATHS.
1. Jürgensen (Tübingen)	217	1
2. Vogl (Munich)	221	6
3. Military hospital, Stralsund, 1877–82	257	1
4. do in Stettin, 1877–82	186	3
5. Brand (Hausärztliche Praxis)	342	1
	1,223	12

NOTE: Three cases are excluded from the number reported by Jürgensen, because they were treated with antipyretics.

Although some other military statistics are more favorable, I have selected those given in this last table because the first can be confirmed by reference to the Sanitary Reports, and because the second have occurred, as it were, under my own eye. My own 342 cases cover a period of 30 years, and include all primary complications. An analysis of the 12 fatal cases is as follows:

Jürgensen.—1. Treatment begun on the ninth day. Death from perforation and peritonitis.

Vogl.—2. Treatment begun on the eighth day. Death from fever.

3. Treatment begun on the sixth day. Death from phlegmonous glossitis.

4. Treatment begun in second week. Death from cardiac weakness.

5. Day of beginning treatment unknown, "already tired for a long time." Death from hemorrhagic diathesis.

6. Treatment begun in the second week. Death from cardiac weakness.

7. Day of beginning treatment not given, temperature 41° C. (195°.8 F.) evidently late in illness. Death from lesion of larynx and œdema of the lungs.

Stralsund.—8. Treatment begun on the fourteenth day. Intestinal hemorrhage, diphtheria, petechiæ ,double hypostatic congestion.

Stettin.—9. Treatment begun on the fourteenth day. Pneumonia and intestinal hemorrhage.

10. Treatment begun on the sixth day. Because of inflammation of the joints treatment was stopped.

11. Treatment begun on the sixth day. Death from retropharyngeal abscess.

Brand.—12. Treatment begun on the fifth day. Death in a relapse from some unknown cause.

The tenth and twelfth cases do not properly belong in this list. In the others death resulted either from the fever itself or its complications. In 1877, basing the conclusion upon an analysis of 975 cases, I concluded that the treatment must begin before the fifth day; and these 12 cases confirm that conclusion, all cases recovering in which the treatment was begun before the fifth day.

That is to say, the systematic water treatment has, in all cases in which it was employed early and thoroughly, a mortality figure of 0 per cent., and is really a special treatment, as such is and must be. *It is also, therefore, an ideal treatment, since through it the physician is in a position to save the life of the patient with certainty.*

I by no means say that every typhoid fever case treated by the water treatment must recover, but I have said and repeat that those cases in which treatment according to the

method of Brand is begun before the fifth day, and is thoroughly carried out, surely recover.

To recapitulate, the mortality under the systematic water treatment will average as follows:

a.	In "hausärztlichen" practice	0—1 per cent.
b.	In military hospitals	3—4 " "
c.	In private practice	3—4 " "
d.	In general hospitals	5 per cent.

At this point in the discussion the author briefly reviews the history of the various methods of treatment of typhoid fever, from the "expectant-symptomatic," in vogue before the fifth decade of the present century, to the present, which he summarizes as follows:

1. Expectant-symptomatic.
2. The old Liebermeister method with all possible variations.
3. The new Liebermeister.
4. The systematic water treatment.
5. The antibacteria method.

He says that the physician is obliged to select from these methods that one which best accomplishes its claims, and asserts that an intelligent choice of method cannot be made upon any other ground.

"Every case treated according to the method of Brand will confirm this principle. Under this treatment it will always happen that —

1. During the action of the baths the process (typhoid) is quiet.
2. At the beginning of an exacerbation it starts up again, and if not combated, continues.
3. With the rise in temperature the functional disturbances appear—a manifest cause and effect.

4. The effect of the bath upon the height of the fever is less than at the beginning.

5. The exacerbation is prevented.

6. The failure to combat the exacerbation brings evils which become more difficult and at times impossible to control, and through repeated failures to combat seem to develop cumulative power. These facts form the basis of the treatment of typhoid fever.

They do not show with a clearness which leaves nothing to be desired just what the treatment of typhoid fever should be, but they furnish an occasional glimpse as to the role which the elevation of temperature plays in the course, process, etc., of the fever.

It therefore follows that, in the treatment of typhoid fever *a*—the severe process should be controlled and the course changed to a light one; *b*—every exacerbation prevented; and *c*—every functional lesion rendered less severe. These demands furnish the indications, which are: *Prevention of every exacerbation, with or without elevation of temperature, throughout the entire illness, day and night, from the beginning to the end.*

It has been already shown above that this can be accomplished by means of the water treatment; and the method is expressed in the formula: *Every 3 hours a cold bath, 15° R. (59° F.) lasting 15 minutes, as long as the temperature rises above 39° C. (102°.2 F.), combined with cold douching and frequently changed compresses over the abdomen.*

Through such baths, repeated regularly at that interval, the exacerbation will be prevented, and the organs rendered capable of their normal functional activity. It is here to be said that only such baths will have this effect which produce abstraction of heat and stimulation. Those which produce only one

of these effects will not suffice. When the elevation of the body temperature obstinately remains, the baths must be colder and longer. Vogl, Tripier, Bouveret and Jürgensen repeat the baths at shorter intervals, in such cases, but I do not. If functional disturbances occur at a temperature below 39° C the stimulating treatment is required, viz., tepid baths with cold douching and strong friction.

Of course such conditions as vitium cordis occurring as a primary complication present special situations which must be met. All such complicated situations are fully discussed in my monograph. As is well known, one has less to do in the complicated cases with the typhoid fever than with their *sequelæ*, —tuberculosis pulmonum, cardiac weakness and brain lesions— in short, the increasing functional disturbances of all organs and the accompanying septic, pyæmic and croupous processes. While in an uncomplicated typhoid case the combination of the heat-abstraction with the stimulation is indicated as antifebrile treatment, in a complicated and degenerated case, stimulation and revulsion are necessary to combat the functional disturbances and local lesions. This condition, or differentiation, is not as yet sufficiently observed, and hence many errors in treatment have arisen. The most common is, that in low temperature three hours after the bath, it is not repeated although severe symptoms on the side of the brain, lungs, heart, and kidneys are present. Of course in such conditions the nature of the bath must be suitable, and the otherwise useful cold bath must not be given. The formula as given applies to the very great majority of cases, and cannot be changed except at the expense of the safety of the result.

The author proposes the question: "Is it possible with the other methods of treatment which obtain to-day to meet the demands in typhoid fever, as well as with the water treat-

ment?" With the "other methods" the author deals summarily. He condemns the symptomatic-expectant treatment upon the ground that since it waits for the rise in temperature before combating it, it is impossible for it to do as well as a method which seeks to prevent its occurrence.

The earlier Liebermeister method is open to a similar objection. The present method of Liebermeister treats the temperature as the most important condition of the typhoid case, which it by no means is, but rather a small part of the process, and its greatest error is the assumption that after the morning remission the course of the process during the day is of no importance. Ziemsen, using this method of Liebermeister, reported the following mortality: For 1882, 10.2%; for 1883, 18.6%. "The author claims that the method of treatment by means of prolonged baths, the method of Riess, is open to the same objections as those of Liebermeister are. In regard to the treatment with thallin the author remarks: 1. A poisoning of the body lasting for 4 or 6 weeks cannot be a desirable thing. 2. Sweatings and rigors are added to the typhoid fever symptoms. 3. That one cannot accomplish much of value in typhoid or febrile diseases by means of a medicine which has only an antipyretic action. 4. The convalescence is protracted (Jacksch, *Verhandlungen des Congress für innere Medicin, 1885*). The author also thinks that the same objections hold good against the use of antipyrin, and he cites the clinical notes of two fatal cases to establish his position.

In regard to the antibacterial or the bacteriacide treatment, the author thinks that it is both not new and not established, having been tried thirty or forty years ago at Hamburg.

The articles close with the following statements: "Jürgensen has thoroughly proved all methods which have appeared during the course of years, and is more and more inclined to

return to the systematic water treatment. (*Verhandlungen des Congress für innere Medicin, 1882, p. 102*). At the same congress Liebermeister closed his remarks with the following sentence: "Experience has shown that brilliant results in the treatment of severe febrile cases are obtained only when cold baths are the foundation of the treatment."

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ABSCESS IN THE BRAIN RESULTING FROM DISEASE OF THE EAR. —*By* THOMAS BARR, M. D., *Surgeon to the Glasgow Ear Hospital.*

It is generally admitted that where abscess in the brain is not due to an injury, it depends usually upon some other pre-existing purulent center, and I shall limit my remarks to that frequent form of abscess in the brain which has its origin in a pre-existing purulent center in the ear.

What is the situation and what is the nature of the ear disease in such cases? The situation is almost invariably, in the first case at all events, in the middle ear. Many of the published records mention the internal ear as the soufce of the mischief. This is a mistake. No doubt the internal ear as well as the external ear, is sometimes implicated, but then nearly always secondary to the middle ear affection. The air-filled cavities of the middle ear, especially the tympanum, the antrum mastoideum, and the mastoid cells, are primarily and essentially the seats of the mischief in the ear. What is the nature of the disease? It is a chronic purulent inflammation in the lining membrane of these cavities.

The acute form of purulent inflammation of the middle ear is very rarely, if ever, the cause of intracranial disease. This chronic inflammation leads to partial destruction of the tym-

panic membrane, more or less accumulation of decomposing purulent secretion, and frequently to the formation of granulation-tissue or polypi. The long walls of the middle ear are usually sooner or later involved, either by the occurrence of caries or necrosis, or by hyperostotic or sclerotic changes leading to contraction of the normal cavities of the ear, or to the conversion of the mastoid cells into dense osseous tissue of almost ivory consistence. For months or years, or even a lifetime, the sufferers from this disease go about, usually not at all disconcerted, with purulent septic centers in the interior of their temporal bones. This predisposing cause of cerebral abscess is thus constantly with us in the persons of hundreds and thousands of the community. At the Glasgow Ear Hospital alone, there are usually 300 to 400 persons who annually present themselves suffering from this affection; but it has been noted by various observers, including myself, that, in addition to this predisposing, there is also usually an exciting cause which provokes the mischief in the brain. An injury, such as a blow upon the head or ear, or an irritating influence acting upon the ear, is frequently found to immediately precede the pain in the head or the vomiting which ushers in the graver illness. In nine cases which have come under my own observation, one followed a box on the affected ear, one was due to a blow on the back of the head inflicted with the open hand; in another, the act of diving in the sea, and the consequent rush of cold water into the affected ear, immediately preceded the head-symptoms; in two, the symptoms followed within two or three days of surgical manipulation in the ear, while in the case of the boy who was operated upon by Dr. MacEwen, the exciting cause was probably connected with his fondness for "headers" in playing at football. In a certain proportion of such cases there may have been really a

cerebral abscess in a latent form, existing perhaps for months or years, manifesting itself by no definite symptoms until the blow or irritation aroused a new and energetic process in the direction of increased formation of pus or of a fresh inflammation in the walls or in the vicinity of the abscess.

What proportion of cases of abscess in the brain depends upon disease of the ear? There is a general consensus of opinion that ear-disease is distinctly the most frequent cause of cerebral abscess. In the synoptical record of seventy-six cases given by Sir William Gull and Dr. Sutton in their article on "Abscess of the Brain," published in 1872, in Reynolds' *System of Medicine*, twenty-seven cases, or rather more than one-third, were consequent upon ear-disease. In Lebert's article in Virchow's *Archiv.* for 1856, vol. x, based upon eighty cases of cerebral abscess, the proportion given is one in four. But in many of the cases not attributed to the ear, given by these authors, the middle ear had not, it was evident, been examined, while in a goodly number the disease was said to have originated in a blow, which may be quite compatible with its real origin in ear-disease. In the article in Reynolds' *System of Medicine*, there are ten, I think, in which no cause is mentioned. We know that up to the time at which these articles were prepared the hearing organ was very little examined, either in the clinical wards or in the *post-mortem* room. We know also that purulent disease may exist in the middle ear without the knowledge of the friends of the patient, or even of the patient himself. Unless therefore the middle ear had been examined in every one of these cases, we are not in a position to say that these 47 cases in 156 of cerebral abscess give

a correct notion of the extent to which ear-disease accounts for cerebral abscess. I am confident that persons die from abscess of the brain, originating in the ear, without the aural origin being known, because the friends of the patient may not be aware of the state of the ear, or may not deem the so-called "running ear" worthy of being mentioned to the medical attendant. Judging from the numerous cases scattered through medical literature and published within the past ten years, during which more close attention has been given to the ear in such cases, and also from the experience of our own hospitals, we are, I think, justified in attributing fully one-half of the cases of abscess in the brain to purulent disease of the ear. As time goes on and as medical men come to use the ear speculum in every case presenting symptoms of cerebral disturbance, the frequency with which ear-disease leads to a fatal issue will be found to be greater than has hitherto been suspected. In looking over the Registrar-General's Annual Reports, I find that the number of deaths in London attributed to otorrhœa, most of which would be due to abscess in the brain, in the year 1882 was eighty-six, and in the eight principal towns of Scotland the number for one year was twenty-six. I think we are entitled to conclude that those numbers, considerable as they are, do not express anything like the real number of victims to this disease who perish annually in London and the eight principal towns in Scotland.

A very important question, especially as bearing upon the operation of trephining the skull in such cases, is as to the most frequent situation of the abscess, and as to the condition of its walls and contents (I speak of course with reference to those originating in the ear). It is unfortunate that

in many of the published records these points, especially the state of the walls and contents of the abscess, are not given with that carefulness and minuteness which would have been desirable. In seven cases which came under my own notice, where *post-mortem* examinations were made, the abscess was, in six of them, in the temporo-sphenoidal lobe, above the affected ear. In one of these six there was, in addition, complete occlusion of the lateral sinus, whose walls were converted into a fibrous cord, and there was also a collection of pus in the region of the lateral sinus. In the seventh case the purulent secretion existed between the dura mater and bone, over the posterior surface of the petrous part of the temporal bone. In all my cases the odor from the abscess was extremely fœtid, almost gangrenous, and the pus was generally of a greenish color. In regard to the condition of the walls of the abscess, there was in three of my cases a distinct limiting membrane, encapsuling the abscess and separating it from the neighboring brain-tissue. In the others there was no limiting membrane, the neighboring brain-tissues being soft, broken down, or sloughy. In addition to my own cases I have, in order to gain fuller information especially as to the position of the abscess, gone over the published records of others, in which the abscess in the brain was dependent on ear disease. The whole included 76 cases, of which the abscess was in the cerebrum (generally described as the middle lobe) in 55 cases, or about 73 per cent. of the whole ; in the cerebellum, 13 ; in the cerebrum and cerebellum, 4 ; in the pons varolii, 2 ; and in the crus cerebelli in one case. In 9 cases the abscess was said to be encysted, but unfortunately in the greater number there is no information given on this point. As to the con-

dition of the abscess-contents in regard to odor, there is also very little information given in these sixty-nine cases, but when any reference is made to odor, it is described as fœtid. In all the abscess was on the same side as the ear diseased. Rare cases have, it is well known, been recorded, of the abscess being on the opposite side. How is the disease in the middle ear propagated to the interior of the cranium? There are two main directions by which this extension takes place; first, and most frequently, by the roof of the tympanum and antrum mastoideum, to the middle fossa of the cranium, and to the temporo-sphenoidal lobe of the cerebrum above. As shown by the published records of these cases, already mentioned, this is by far the most frequent path by which the disease invades the interior of the cranium. Here the septic purulent focus is separated from the brain above by osseous partition which is never thick, and frequently so thin as to be transparent. It is always perforated with apertures for connective tissue, vessels and nerves. Gaps are not infrequently found, and at these the dura mater and the mucous membrane of the middle ear are in direct contact, while in childhood a very distinct fissure often exists, through which a process of dura mater, with vessels and nerves, passes down and becomes continuous with the mucous membrane lining the tympanum. By simple continuity and contiguity, therefore, without a carious aperture, the diseased process may readily pass upwards to the dura mater and brain, giving rise to a subdural or a cerebral abscess. I show you here four temporal bones where carious apertures will be seen in this situation in all of them.

The second way, in point of frequency and importance,

by which the disease in the middle ear extends to the interior of the cranium, is by the inner wall of the antrum and mastoid cells to the dura mater lining the posterior fossa, and to the cerebellum, giving rise to a sub-dural collection of matter, or a cerebellar abscess, or both. Here we have in the deep concavity of the groove for the lateral sinus only a thin osseous partition separating the walls of the sinus from the mastoid cells. It has also the peculiarities mentioned as belonging to the roof of the middle ear—namely perforations, and frequently gaps. In two of the specimens shown by me to-night it will be seen that there are carious erosions and perforations; but, without such disease of the bone, simple juxtaposition of the lateral sinus with the ear, in suppurative disease of the latter, is a source of great danger. All surgeons know that phlebitis and thrombosis are very apt to form in the vessels of a tissue which is the seat of a purulent inflammation; and is it surprising that phlebitis and thrombosis should be frequently set up in this large venous trunk, so closely contiguous to, and so connected by blood-vessels with, the diseased part? Probably some degree of phlebitis of the lateral sinus is not an infrequent complication of purulent disease of the ear. The mischief is, however, in most cases limited to some thickening of its walls, and to a consequent diminution of its lumen.

In either or both of these situations, therefore, disease of the ear most frequently affects the interior of the cranium; and, while carious apertures are by no means always present there, they are frequently found. They are usually found in the roof of the middle ear when the temporo-sphenoidal lobe is involved, and in the region of the lateral

sinus when the cerebellum is the seat of the abscess. In my own cases, five out of seven contained carious apertures; in the other sixty-nine which I have gone over, it is mentioned in twenty-seven cases that caries existed in the petrous or temporal bone, but no precise information is given as to the situation; it was apparent in many of them that this point had not been sufficiently observed. In regard to the mode of extension from the middle ear to the interior of the cranium, there is no doubt that in some, although not in many, the purulent contents of the middle ear, pent up and hindered by some obstruction from escaping through the outer channels of the ear, burst through a carious aperture or natural foramen, or a gap, into the middle or posterior fossa, burrowing between the dura mater and bone, or, if the dura mater has been previously softened and perforated, making its way into the arachnoid space, or into the tissue of the brain itself. But probably more frequently, even where caries does exist, there is simply a direct transmission, by vessels and lymphatics, of the septic inflammation from the cavities of the middle ear to the dura mater and its sinuses in the first place; and then, by contact, an inflammation of a similar character affects the pia mater and brain. In those cases—which, I think, are not very frequent—where the parts between the brain-abscess and the middle ear seem to be healthy, the propagation probably takes place by the immigration of bacteria from the purulent focus in the ear along the lymphatics surrounding these branches of the internal auditory artery which anastomose with the vessels of the pia mater, and thus reach the interior of the brain. Multitudes of bacteria have been found in a cerebral abscess a few hours after death. Dr. James Alexander

Adams suggests that the bacteria reach the brain through the veins ; that, where the lateral sinus is occluded, there is a backward current of venous blood. In this way, it is suggested, bacteria attached to thrombi carried from the ear by the veins which pass into the sinuses of the dura mater find their way into the interior of the brain.

There is no doubt that pus from an abscess in the brain sometimes makes its way into the ear, probably through the roof of the middle ear. In the case in which Dr. MacEwen operated there was unquestionably a partial escape of the matter from the brain into the ear for two or three days before the operation, but this was attended by no improvement in the symptoms. Some of the older writers describe an "otorrhœa cerebralis," in which the abscess in the brain was thought to be the primary condition, the discharge from the ear being secondary, and coming directly from the abscess in the brain. The opinion now generally held is that in all such cases the ear-disease is the primary condition and the cause of the brain-abscess. I was very much interested, however, in being informed by Dr. McLeod that he saw a case of cerebral abscess in the frontal lobe due to an injury, and associated with necrosed bone over the seat of the abscess, in which the matter was proved to have made its way along the base of the skull to the roof of the external auditory canal, through which it penetrated, and found exit by the outer orifice of the ear.

Finally, with respect to treatment, the recent cases of Mr. Barker, Professor Greenfield, and Dr. MacEwen have inaugurated a new era in the previously hopeless, dismally hopeless, cases of cerebral abscess. Previous to the cases of these gentlemen, I know of only two recorded instances

of recovery after opening the skull for cerebral abscess, both due to ear-disease. One was reported by C. Tauckenbrod, of Hamburg, in the *Archives of Otology*, vol. xv, Nos. 2 and 3, 1886. In this case, the mastoid process was opened first, and a quantity of fœtid caseous matter washed out. The opening in the wall of the skull was made by chiseling backwards and upwards for a distance of about three centimeters from the opening in the mastoid. A small rough place was found in the bone, and here a piece was chiseled off, and the dura mater exposed. There was pus between the dura mater and bone; and, on puncturing the brain at this part, a cupful of matter escaped. The abscess-cavity was syringed with a solution of corrosive sublimate. Ultimate recovery took place, and the patient followed his occupation of architect, his only drawback being a certain degree of word-forgetfulness, aphasia having been a striking feature in the symptoms previous to the operation.

The other case was by Dr. Schondorff, described in the *Monatschrift für Ohrenheilkunde*, 1885, No. 2. Here there was a fistular orifice in the skull leading to the brain; where the abscess existed. It will be seen that these two cases are different from the recent ones in this important respect —that, in the former, there were affections of the bones of the skull indicating the probable seat of the matter, while in the latter no such indications existed. It is quite clear that, in the future, persons suffering from abscess in the brain, dependent upon ear-disease, should not be left to die as they have been in the past without an effort being made by opening the interior of the cranium to reach and drain the abscess; and an important question—which, perhaps, cannot be settled until further experience has been gained—is,

how can the abscess be best reached, and how can it be most efficiently drained?

Speaking of abscess in the temporo-sphenoidal lobe, the most common form, it might be said that if we could penetrate the floor of the middle fossa of the skull through the roof of the middle ear, we would get access to the most dependent part of the abscess in the brain, or to any collection of matter between the bone and the dura mater; such a method would also imitate that by which Nature sometimes attempts to get rid of the matter. This plan has been attempted and it failed.

A case is reported by Dr. Sutphen, of America (*Archives of Otology, 1884*), in which an opening was drilled with a trocar in the roof of the tympanum, and no pus escaped, although after death a large collection was found in the brain above. The great objection to this mode of operating is the difficulty of making and maintaining a sufficiently large opening for the escape of the pus, in such a narrow space as the tympanic cavity, made still more narrow by inflammatory swelling. The plan pursued by Dr. MacEwen seems to be the most practicable, namely, to open the skull about two inches above the ear, and, when the abscess is found, to make another opening lower down, nearly on a level with the floor of the middle fossa of the skull. If a current of fluid can be made to pass from the upper to the lower openings, thorough cleansing would be ensured. I am not sure of the desirability of invariably opening into the mastoid cells as preliminary to the larger operation. If a case presented indisputable signs of intracranial mischief, and if there was neither redness, swelling, nor tenderness over the mastoid process, I question the propriety of opening into

the latter. No doubt we would often find caseous matter, in examining the cavities of the middle ear after death, in any person who has suffered from chronic suppurative inflammation; although his death may have had no relation thereto, caseous matter would be found. In a person who has possibly meningitis or a cerebral abscess, it is questionable practice to submit the cranium, without a very important reason, to the concussion caused by striking a chisel with a mallet, this having been hitherto regarded as the safest mode of opening the mastoid cells. Again, if the lateral sinus is far forward, which it not infrequently is, great care indeed is required to avoid doing serious injury.

In a temporal bone from a case of cerebral abscess which occurred in the Ear Hospital in September last, it was seen that only one-twelfth of an inch intervened between that part of the outer surface of the bone where it is recommended that the perforation should be made and the lateral sinus. If an attempt had been made to trephine or drill the bone at this position, there would have been great danger of fatally wounding the lateral sinus.

I may conclude with one remark as to preventive treatment. It is this—that when every member of our profession is sufficiently impressed with the importance of chronic suppurative inflammation of the middle ear, and prepared to efficiently treat this disease in all its stages, the occasion for this operation will probably seldom arise.—*British Medical Journal.*

UNTOWARD EFFECTS OF COCAINE.

The varied and constant use of the hydrochlorate of cocaine by almost every practitioner of medicine renders imperative attention to the fact that this drug may act as a

poison, since a very large number of well-authenticated cases of this character are now on record. While almost every reader of the current medical journals can recall the report of some case in which serious symptoms asserted themselves, the literature of the subject is so scattered that little attention has been given to it. Within the last few weeks, however, quite a large number of cases have been recorded in various medical periodicals, especially in Great Britain.

One of the first things which strikes the reader of these reports is the fact that no particular line of symptoms appears to be characteristic, and that the doses reported as producing toxic symptoms vary even more than the unlooked-for results themselves.

In England, where the practice of using cocaine hypodermatically for the purpose of producing local anæsthesia seems to be carried on much more fully than in this country, surgeons have reached the most varied conclusions as to the dose which may be safely given in this manner. Some insist that as much as four grains may be given under the skin, while others report very serious poisonings from the use of one grain. Thus Magill records the case of a strong, healthy man to whom he gave, previous to an operation for phimosis, a hypodermatic injection of one grain. In fifteen minutes the man was extremely pale and suffered from severe præcordial pain. The pulse was very slow and intermittent, but did not resemble that present when syncope is impending ; complete recovery took place in twenty minutes. More remarkable even than this is the record of seventeen cases gathered by Ziem, of Dantzig, in 1885, in which decided toxic effects occurred simply through instillations of the drug into the eye, and in which the amount of

cocaine reaching the general system must have been very small indeed.

The symptoms which assert themselves are, as has just been stated, remarkable for their variety, and they range in severity from slight systemic depression to temporary blindness, or even syncope and collapse. Robson records a case in which aphasia followed its use in the removal of a nasal polypus, while Littlewood has seen great loquacity, and finally syncope, follow the hypodermatic administration of sixty minims of a six-per-cent. solution.

The interesting question in regard to this matter is the cause of the production of these symptoms and the best method for their avoidance. Unfortunately, there seems to be no fixed rule on which we can depend, since the causes themselves are as yet not by any means understood. Naturally idiosyncrasy occurs to the mind of every one as the most likely explanation, and this idea is somewhat strengthened, perhaps, by the various effects produced.

Again, it may be that the sudden and enormous demand has led to the placing on the market of adulterated or carelessly prepared samples of the drug, and if this be the case the reports of toxic effects should be constantly on the decrease, since at present the supply and demand are so nearly balanced. Whatever may be the explanation, it certainly seems of the greatest importance that the profession in general be reminded that cocaine is not to be used recklessly and without proper care.—*Medical News.*

A FORM OF GONORRHŒAL CONJUNCTIVITIS NOT DEPENDENT UPON INOCULATION.

The general recognition of the fact that the malignant purulent ophthalmia which occurs with gonorrhœa is due to

direct inoculation with the urethral discharge, has often caused it to be forgotten that there is another form of conjunctivitis, which also depends upon gonorrhœa, but is not caused by inoculation. Its existence was recognized by Abernethy, who described cases in which urethritis, articular rheumatism, and an irritative ophthalmia alternated in their occurrence, or in their severity. Most modern writers, however, have looked upon gonorrhœa almost entirely as a local affection, and have ignored the possibility of its affecting the eye, except through direct application of the discharge. In a paper published in Knapp's *Archiv.* (June, 1886), Dr. Haltenhoff, besides quoting cases mentioned by other writers, gives four of his own, in which it seems probable that inoculation played no part. The conjunctival injection is less than in the ordinary cases, and the secretion mucous rather than purulent; but the most distinctive features are the occurrence of multiple arthritis, the simultaneous affection of both eyes, and the tendency to recur with each attack of gonorrhœa, although, in subsequent attacks, the patient has been careful to shield his eyes from all risk of inoculation. Professor White, of Philadelphia, considers this form of gonorrhœal ophthalmia more common than that induced by inoculation.—*British Medical Journal.*

COMPARISON OF THE METHODS OF REMOVAL OF CATARACT WITH AND WITHOUT IRIDECTOMY. BY DR. H. KNAPP, *of New York.*

If we compare the simple extraction with the extraction combined with iridectomy, we find as advantages of the former the following:

1. It preserves the natural appearance of the eye.

2. The acuteness of vision, other things being equal, is greater.

3. Eccentric vision and "orientation" (correct localization of objects in the visual field) are much better, adding a great deal to the comfort and safety of the patient.

4. Parts in direct connection with the ciliary body, such as shreds of the capsule and iris, are not so liable to be locked up in the wound and thus transmit morbid conditions to the most vulnerable part of the eye, the ciliary body.

5. It may not necessitate so many after-operations.

As *disadvantages* may be mentioned:

1. The technique of the operation is more difficult in all its parts: (*a*) The section must be larger, to let the lens pass through an aperture the size of which is diminished by the iris lying in it; it must be more accurate to secure coaptation, and it must be more rapidly performed in order to prevent the iris from falling before the knife. (*b*) The opening of the capsule requires a deeper introduction of the cystitome into the anterior chamber. (*c*) The expulsion of the lens is more difficult, and (*d*) the cleansing of the pupillary area is much more troublesome than in the combined extraction.

2. Prolapse of iris and posterior synechiæ are more numerous.

3. It requires a quieter and more manageable patient during and after the operation than is needed in the combined extraction.

4. It is not applicable to all patients, whereas combined extraction can be used as a general method.—*Archives of Ophthalmology for March, 1887.*

ON THE MANAGEMENT OF PERFORATIONS OF THE MEMBRANA TYMPANI.—By SIR WILLIAM B. DALBY, F. R. C. S., M. B. (*Cantab.*) *Aural Surgeon to St. George's Hospital.*

If any examples of a morbid condition of the body might be described as having individualities of their own, as exhibiting various moods, or showing diversity of behavior under treatment, surely it would be perforations of the tympanic membrane. To those who are in the daily habit of observing how soon they occasionally heal, how for long periods they do not heal (periods to be measured by years, and even by long life-times), how tolerant at one time they are of manipulation and of treatment, how intolerant at others, how susceptible to climate, to diet (especially in the matter of stimulants), they indeed display an "infinite variety."

Occasionally there may be found fragmentary additions to medical literature in which this application or the other is recommended as the best treatment for perforations. Now, although many of these applications are useful under appropriate conditions, I fear it is nearer the truth to say there is no best treatment that may be employed by those who appreciate the interesting variety referred to as belonging to perforations.

To begin with early life. Of all children who during their infancy have a purulent discharge from the ear, after a few hours of pain in the ear (the position of the pain being generally unrecognised at the time), how very small a proportion are submitted to an examination of the membrana tympani! When in isolated cases they are so examined at the time of the discharge, is it not almost the rule that the membrane is found to be perforated? The probabilities, therefore, are that in all, or at least most of them, these discharges are accompanied at the time by perforation. I say at the time,

for when the membrane is examined weeks or months after the discharge has ceased, it is often discovered to be entire. We must admit, then, that during infant life the membrane is extremely prone to become perforated, and happily equally prone to heal. This view must have occurred to so many that it is only necessary to mention it, in order that either the occurrence of the perforation or its healing should not excite surprise with those who see comparatively little of ear-disease.

What is still further deserving of notice is that the majority of these children, when they grow up, hear well. If this fortunate ending of the affair is occasionally in part due to the fact that there has been no local interference, it does not follow that nothing in the way of management should be done for recent infantile perforations; but I feel convinced that they are better without treatment, if such treatment includes mineral astringents in solution; the sulphate of zinc and acetate of lead lotions, which used to be thought as necessary for a perforation as iron and quinine mixtures and Latin verses are still for the English boy, are worse than useless. Scrupulous cleanliness—not only by removing discharge from the meatus, but by its expulsion from the tympanic cavity, vegetable astringents, and protection from the action of external air—include the routine of treatment under which the perforations are aided in healing. The same will apply to the treatment of recent perforations in adults, and when the perforation has healed, so long as there is undue secretion within the tympanum, if the case is treated as one of catarrh, the best possible results as to future hearing will follow. Why, then, do we find so many perforations which have occurred from simple catarrhal inflammation either permanent, or, if they heal, leaving such considerable losses in hearing? Of course the disorganization of the tympanic cavity (the result of inflammation)

must be taken into account; but, having excluded this element, I cannot but think this is sometimes due to the pardonable anxiety of the patients to (as they express it) "stop the discharge," and so they resort to anything that offers this prospect.

No doubt, for a time, the mineral astringent will do this, but it does more—it stops the healing, and it stops the hearing. For it astringes the tympanic end of the Eustachian tube; it prevents the possibility of expelling the discharge from the tympanum through the perforation; it allows the discharge to collect in the tympanic cavity, and become inspissated; it causes cicatrization of the edges of the perforation—in short, it does not give the lesion a chance of repair. More than this, when the mineral astringent whose motto is, "Stop the discharge," is discontinued, the discharge comes on as before, so it indifferently fulfils its own motto. I suspect that the advertised lotions and drops for the ear which patients obtain and use on their own responsibility contain mineral astringents in considerable quantities, as they sometimes cause great pain, and excite inflammation as soon as they reach the perforation. If it is thought that the expulsion of the discharge from the tympanum through the perforation tends to keep open the perforation, let it be remembered (and it is a matter of common knowledge) that if a membrane is inclined to heal, nothing of this kind prevents it; of this fact we have ample evidence in the case of perforations made for remedial purposes in cases of chronic proliferous catarrh; and it surely is desirable in the instance of perforation caused by disease that at the time when this happens as little as possible of the products of inflammation should be left within the tympanic cavity.

And now in regard to the tolerance or intolerance respec-

tively which perforations of long standing exhibit to well recognized and useful applications. Take for example the case of alcohol. Many perforations with unhealthy edges, discharging in large quantities from the tympanum, at once become more healthy under the use of alcohol in various dilutions; but to some, alcohol, even extremely diluted, is most painful and irritating. This is especially noticeable if the perforation is of small size. How can it safely be said in a general way that alcohol is a good treatment for perforations? The same may be said of iodoform or boracic acid. What satisfactory results either of these applications often produces in old perforations with bone granulations and a fœtid discharge! But the fact that they occasionally set up irritation is enough to prevent me, and probably many others, from recommending them when the patient is subject to pains in the head, especially if these pains are chiefly on the same side as the perforation.

The tolerance and intolerance of all forms of artificial membrane or support which perforations show is so well recognized that it is hardly deserving of mention; and the excellent hearing and improved local condition of the perforation is perhaps better known than occasional intolerance which some perforations show to its employment; but the following case will perhaps illustrate so well what I might term the behavior of a perforation under treatment that I relate it.

About fifteen years ago, a gentleman had perforations of both membranes after scarlet fever. On the right side all hearing was lost and the perforation healed. It was then found that on the left side (he being extremely deaf with this ear), he could obtain excellent hearing by the use of a cotton wool pad, which he learned to apply to the perforation. This he habitually used during fourteen years spent

in active work which necessitated good hearing. Finding one day that the pad did not give the usual result, he tried various applications without avail. Having noticed that the pad was very dry when it was removed, he proceeded, on his own account, to irritate the ear in several ways in order to produce a discharge. Amongst other plans which he tried, one was by dipping the pad into turpentine. This was soon followed (strangely enough, without any pain) by a discharge, and on again adjusting the pad he heard well for several days. Finally, nothing succeeded; the ear became dry and he was deaf.

When I saw him I found, as he told me was the case, that the perforation had healed. The size of the old perforation was markedly shown and filled up with new tissue. After I had made an incision into the membrana, and after a great deal of trouble, the new tissue disappeared, leaving the old perforation as before, and he could again use the pad with efficiency, and without the tendency to heal being shown. Could anything illustrate better than this little history the behavior of perforations? One might almost say that it is necessary to make use of our experience to anticipate their moods, and even then we shall be often wrong in our surmises. What is needed, however, to treat satisfactorily perforations of the membrana tympani, and many other forms of chronic disease, is the intelligent co-operation of the patient, and whoever is the subject of them must patiently learn to manage himself. When it is remembered that by careful management the hearing may frequently be made and kept good enough for the ordinary purposes of life, and, more important still, the patient may be often kept free from the dangers which have a fatal ending, it is not trouble ill-spent.

Of all the many forms of perforation, some of the most troublesome are perforations of Shrapnell's membrane, and the most difficult to treat are those in which there is evidence of caries. The easiest to treat are perhaps those in which the perforation has arrived at a dry state without any discharge, a state which it may retain for many years if not interfered with; then a masterly inactivity, as shown by leaving it alone (it may be permitted to say for this perforation, if for none other) is the best of all treatments.—*British Medical Journal.*

NECROLOGY.

ARLT.

PROFESSOR ARLT, of Vienna, recently died in that city. He was one of the most eminent scientific ophthalmologists of his day, and at one time enjoyed the reputation of being the most skillful operator upon the eye in the medical profession. His contributions to ophthalmology, both as a teacher and a writer, have been of great value.

JEWELL.

DR. JAMES STEWART JEWELL died at his residence in Chicago, on April 18th, aged 49 years and 7 months. At the time of his death he was Emeritus Professor of Nervous and Mental Disease in the Chicago Medical College, having filled a chair in the college for many years prior to the failure of his health. He was a man of exceptional learning, and had a wide reputation as a neurologist. He established and conducted for many years the *Journal of Nervous and Mental Disease*, until ill-health compelled him to relinquish his editorial work and interrupted his professional occupation. Later his health improved some, and he resumed the practice of his profession and started the *Neurological Review*. But a few numbers of this journal had been issued when he had to suspend its publication, because his impaired health would not permit his continuance of the work in connection with it.

His death affords another illustration of what is so often seen in the medical profession—men sacrificing their health and their lives by over-work, against which they admonish their patients, but which advice they disregard themselves.

The death of Dr. Jewell is a loss to our city and the medical profession, as well as to the science of neurology.

ITEMS.

THE MONUMENT TO DR. BENJAMIN RUSH.

The Committee of the American Medical Association having charge of the project to erect a monument to "America's most distinguished physician," who was also a great statesman and a signer of the Declaration of Independence, is still at work collecting funds for that purpose. Medical-Director A. L. Gihon, of the United States Navy, is chairman of the committee and will report on the progress thus far made, to the Association at its next annual meeting, to be held in Chicago on June 7th. Dr. S. J. Jones, of Chicago, is the representative of the Committee for the State of Illinois, to whom contributions for the monument-fund may be made, at No. 240 Wabash avenue.

ADDRESSES IN THE GENERAL SESSIONS OF THE INTERNATIONAL MEDICAL CONGRESS.

Many of the medical journals in this and other countries have announced the fact that Professor F. Semmola, of Naples, Italy, is to give a general address on "Bacteriology and its Clinical Therapeutics," to the Congress in general session. General addresses are also promised by Dr. Neudorfer, of Vienna, Austria, on "The Military Medicine of the Present and of the Near Future;" Dr. Esmarch, of Kiel, Germany, on "Bloodless Operations in Surgery;" Dr. Lutaud, of Paris, France, on "The Influence of the Discoveries of American Surgeons on the Development of Gynæcology in Europe,"

and Dr. Austin Flint, of New York, N. Y., on "Fever, Its Cause, Mechanism and Rational Treatment"—all topics of interest to the whole profession.

MEDICAL SOCIETIES TO MEET IN CHICAGO:

The Illinois State Medical Society will meet in this city, in the Methodist Church Block, on May 17th, at 10 A. M.

The Association of American Medical Editors will meet in this city on June 6th.

The American Medical Association will hold its annual meeting in Central Music Hall, corner of State and Randolph streets, in Chicago, beginning on June 7th, at 11 o'clock.

The Executive Committee of the Ninth International Medical Congress will meet in Chicago on June 6th.

MEDICAL NOTES.

CONCERNING THE COST OF STROPHANTHUS.

Since the new heart-stimulant, strophanthus, has been attracting attention, a charge has been made that a London drug-house had control of the sale of the article, and was charging an excessive price for it.

Messrs. Burroughs, Wellcome & Co., in *The Chemist and Druggist* of March 19th, say:

The original cost of the pods and seeds together—and we shall be pleased to show our books and invoices in evidence—was quite 4*l.* 10*s.* per lb., and we were able to get 4½ oz. of seed out of each pound, so that the seed cost 20*s.* per oz. For a pint of the tincture the following represents the cost, as at first prepared, of 1 in 8 strength:—

	£	*s.*	*d.*
Strophanthus seed (2½ oz. at 20*s.* per oz.)	2	10	0
Ether, for extracting oil (10 oz.)		3	0
Spt. vin. rect. (1 pint)		2	6
Picking, cleaning, and grinding seeds, and other labor		1	6
Total cost of 1 pint	2	17	0
Cost of 1 oz. of tincture would therefore be		2	10
Glass stoppered bottles (two for each ounce)			5
Wrapping, label, filling, cleaning, etc.			2
Total cost of each ounce in ½-oz. bottles		3	5

Our selling price at first was 2*s.* per ½-oz. bottle, subject to our usual discount to the trade. The cost of distribution in single bottles was very considerable. The above figures, of course, do not take into account the cost of advertising, and the personal efforts and other expenses incidental to procuring and supplying a rare drug like this. The trouble and expense which we have sustained have been very great, and

we are dependent upon future sales for any profits on the drug. The difficulties at first experienced in procuring the drug were very great, but we endeavored to distribute strophanthus among the profession and trade as fairly as possible, allowing only one bottle to any one customer; besides this, we distributed a large portion of our stock to hospitals free of charge

In conclusion, we would say that the strophanthus tincture lately sold in New York was prepared from the original lot of the drug which we received. Less than a month ago we reduced the price of the tincture here from 3*s.* to 1*s.* 6*d.* per oz., for we manufactured it from seeds produced at a reduced price.

STROPHANTHUS-LANOLINE.

The Editor of the *British and Colonial Druggist*, (W. Lascelles Scott, F.C.S.), says in the issue of February 12th, 1887: I have just made some experiments which illustrate, at one and the same time, the penetrating power of lanoline when applied to the skin, and the action of strophanthin upon the heart. With a mixture of two parts lanoline and one of petrogell, 1 per cent. of strophanthin was intimately mixed. Of this ointment, twenty grains was rubbed upon my left arm, the skin having been first freed from the normal oleaginous exudations by the use of a little weak ammonia and a soft cloth. The strophanthin ointment was allowed to remain on until my heart-beats (which very conveniently, have been abnormally high of late) were diminished in number from 103 to 100 per minute, which was the case eighteen minutes and a half from the commencement of the experiment. The pulse continued to recede until a minimum was reached at 94, some fifty-two minutes from the time the ointment was first applied, no further

change occurring for several hours afterward.—*British Medical Journal.*

CASE OF SWALLOWING ARTIFICIAL TEETH.

M.D. writes: With reference to Mr. Ackery's letter, a patient of mine recently swallowed a plate (gold, with two teeth), and I immediately adopted a practice recommended to me some years ago by Sir James Paget in a similar case. I made him eat three good-sized slices of bread and swallow four tablespoonfuls of flour and water made into a fairly thick mass. I then administered an emetic, and the teeth returned entangled in the tenacious vomit. I may add that the first case was euually successful, and that something of this sort is habitually done at police-stations when prisoners passing false coins swallow them.—*British Medical Journal.*

BOOK REVIEWS AND NOTICES.

DISEASES OF THE JOINTS. *By* HOWARD MARSH, F. R. C. S. *Duodecimo, pp. viii., 461. Sixty-four wood engravings and a chromo-lithographic plate. Philadelphia:* LEA BROTHERS & CO. *Chicago:* A. C. MCCLURG & CO.

The author avows an intention to "confine himself mainly to a description of diagnosis and treatment." It is to be regretted that he has done so, for if recent pathology had been given more attention, the work would be valuable as a short text-book to under-graduates.

About two-thirds of the contents are devoted to a description of symptoms, diagnosis and treatment of joint-diseases in general; the other chapters give a review of the diseases as affecting particular joints.

The subject of traumatic dislocation is omitted entirely, and the question of tuberculosis is given only slight attention.

A number of new and valuable suggestions with regard to mechanical appliances are made.

The engravings are clear and many of them new.

References are comparatively few and confined to the works of English authors.

In its present edition the book will be found of use to the student as a short manual of diagnosis, and may give to the practitioner some new hints upon treatment.

A TEXT-BOOK OF MEDICINE FOR STUDENTS AND PRACTITIONERS. *By* DR. ADOLF STRUMPELL, *Formerly Professor and Director of the Medical Policlinic at the University of Leipsic. Translated by permission from the second and third German editions, by* HERMAN F. VICKERY, A.B., M.D., AND PHILIP COOMBS KNAPP, A.M., M.D., *with editorial notes by* FREDERICK C. SHATTUCK, A. M., M.D., *Visiting Physician to the Massachusetts General Hospital, &c., &c. Pp. xx and 981. New York:* D. APPLETON & CO. *Chicago:* A. C. MCCLURG & CO.

The editor of this work has added such notes, enclosed in brackets, as are necessary to adapt it to the use of American students and practitioners. These additions are of two kinds,—the addition of complete chapters upon diseases which, though common in America, do not occur in Germany, as Dengue for example, and such additions to the author's treatment of diseases, and description of health resorts as are needed to represent American ideas upon these subjects. This work has been very acceptably done. The lack of a copy of the German edition prevents an

expression of opinion in regard to the accuracy of the translation, with which, in other respects, no fault is to be found. It is, however, a mistake that the magnifying power, in diameters, is not given in connection with the cuts of microscopical preparations.

As a treatise on the practice of medicine the book is relatively strongest in its treatment of diseases of the nervous system, but it is everywhere full, concise and clear. In comparison with Eichhorst's "Patologie und Therapie" it is less complete in its discussion of the subjects treated, and very much less complete in its reference to the literature involved. In a general way it may be said that Strümpell's bears about the same relation to Eichhorst's, that Bartholow's does to Flint's "Practice of Medicine.' The book has rapidly reached its third edition in Germany, and richly deserves its popularity.

A TEXT-BOOK ON SURGERY, GENERAL, OPERATIVE AND MECHANICAL. *By* JOHN A. WYETH, M.D., *Professor of Surgery in the New York Polyclinic, Surgeon to Mount Sinai Hospital, etc., etc. Pp. viii. and* 777. *New York:* D. APPLETON & CO.

A book can be published, as this one is, without a preface, but such action is so unusual that it is apt to cause unfavorable comment. The fact that this work is sold only by subscription will prejudice some practitioners against it, because its selling price is thus advanced. There are many things in the text which show that the author has not written many books. On the other hand there are many things to be said which are highly complimentary. Among them the following must suffice in this notice. The importance of thorough antiseptic measures is strongly insisted upon, and fairly complete directions are given for their employment. The use of large colored lithographic plates in the chapters on "Ligation of Arteries," "Amputations" and "Hernia," and the use of plates of longitudinal sections of the joints, in the chapter on "Exsections of the Joints," is new. The illustrations throughout the book are good, and the number of them is large. The type is large and the text free from typographical errors. As nearly as one volume can represent it, this one is a very fair exponent of what may be called modern surgery, and will prove an excellent guide to those who use it.

CANCER: A STUDY OF THREE HUNDRED AND NINETY-SEVEN CASES OF CANCER OF THE FEMALE BREAST, WITH CLINICAL OBSERVATIONS. *By* WILLARD PARKER, M.D., *New York and London:* G. P. PUTNAM'S SONS.

Every one familiar with the life of Dr. Parker knows the shrewd practical sense which gave him his large and successful practice. This brochure reflects this quality as much in what it avoids as in what it attempts.

The record extends over fifty years of practice. The author has tabulated nearly four hundred cases of "cancer of the female breast," under

various headings among which are "family history," "manifestation of disease before and after menopause," "age at commencement," "age at operation," "number of operations," "lived after operation," "variety of cancer," etc. The table is introduced by a commentary of about sixty pages.

His diagnoses were, probably, purely clinical. The names given to the growths indicate this. Indeed, it is only within the last few years covered by the record that there was any other method of diagnosis in such cases. But even with care and skill the clinical method is liable to error.

Dr. Parker holds the causes of the disease to be, First, "too much nitrogenous food and too little exercise;" Second, "local irritation of some epithelial surface;" Third, "mental affliction;" Fourth, "dysmenorrhœa." He thinks that the tendency to the disease is the result of the habits of the individual; that heredity has little to do with it; and he makes some calculations to show that even the highest proportion of cases given by the advocates of heredity, in which a family taint can be found, is no more than might be expected from accidental coincidence. It is surprising that although there has been so much discussion as to the heredity of cancerous disease, no one has attempted to trace the history of the descendents of such patients. A case in point occurs to me. The breast of a lady was amputated for "cancer," the disease re-appeared in the axilla and caused her death. This was some eighty or ninety years ago. The history of the growth, which has been many times given to me by eye-witnesses, was exactly that of carcinoma. The patient had many descendents, but no malignant growth has appeared in any of them down to the fifth generation. In a more recent case no malignant growth has appeared down to the third generation; but phthisis developed in the second generation. It does not seem difficult to find many instances among old families, where the history of the descendents of such cases could be traced for generations. If a number of these were carefully compiled and compared with the histories of healthy people, it would go far towards settling the question.

The author does not state how he operated, but unless he differed from his fellows, his earlier methods, at least, were less thorough than those now in use.

He has estimated the duration of the disease in 178 cases; in 100 of these the tumor was removed by the knife. Of these last "there are sixteen cases of long duration * * * which were either living in 1883 or were well when last heard from. Several cases are also living in which the tumors have been removed within the last seven years."

These results are superior to the best European statistics, which are, on the whole, unfavorable. They are better even than those of Gross (*vide* "Tumors of the Mammary Gland"). The question of diagnosis at once arises here. The author insists on the necessity of attention to hygiene in treating the disease. It is not sufficient simply to remove the growth, "we must change the diathesis." * * "Avoid the so-called predisposing causes,—*i. e.;* unnecessary luxury in mode of life; especially abstain from

eating food rich in nitrogen. Urge your patient to take sufficient exercise; point out to her the necessity of cleanliness, and of avoiding all articles of dress that would induce irritation of the skin by pressure. Persuade her to cultivate cheerfulness of disposition, and regulate her various functions, particularly that of menstruation. All this will tend to forestall the development of the disease."

There is nothing new in the book and little that can be turned to parcular use, but, it is interesting as a record of the views and experiences of one of the older school of practitioners.

MANUAL OF OPERATIVE SURGERY. *By* JOSEPH D. BRYANT, M.D., *Professor of Anatomy and Clinical Surgery, etc., Bellevue Hospital Medical College, etc., etc., pp. xxvi, and 530, quarto, with 791 illustrations. New York:* D. APPLETON & CO. *Chicago:* A. C. MCCLURG & CO. *1887.*

The very profuse illustrations in this book are a great aid to a text which is clear and concise. The intention of the author was to assist the student in the acquisition of established facts in operative surgery, rather than write an exhaustive treatise. Operations peculiar to the female sex, and those of the eye and of the ear, are omitted, as demanding more extensive consideration than the scope of this treatise allows.

The remarks in connection with the choice and employment of anæsthetics are in accordance with the ideas upon that subject now prevalent in the United States.

The author's style is pleasant, and the description of the various operations is very clear. The book is evidently written by a successful teacher, and it can hardly fail to promptly become the leading text-book upon the subject of which it treats. The letter-press is excellent, and deserves commendation.

TRANSACTIONS OF THE STATE MEDICAL SOCIETY OF WISCONSIN, *1886, pp. 254.*

This volume is made up mostly of papers read at the meeting, some of which are of general interest. This society seems to prefer papers to reports of committees, and the preference seems to have some advantages. The volume contains the usual lists of officers of the society and their addresses, etc.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION, EIGHTEENTH ANNUAL SESSION, *April, 1886.*

This report of 691 pages gives a complete account of the proceedings of the State Society. The session was of four days' duration, and the reports af committees do not constitute the bulk of the matter presented. Much of the matter could be improved by condensation. The prize essay of the year, "Reflections on Physical and Mental Culture," is included in the transactions.

WEAR AND TEAR, OR HINTS FOR THE OVERWORKED. *By* S. WEIR MITCHELL, M.D., LL.D., *Member of the National Academy of Sciences. Fifth edition, pp. 76. 1887. Philadelphia:* J. B. LIPPINCOTT & CO.

Of all that has been written on "American Nervousness," and the various phases of brain exhaustion as they come under the observation of the neurologist, none have appealed so strongly to the common sense of both the lay and professional public, as this little work on "Wear and Tear."

To the physician much of the work appears trite and commonplace, it being written originally for the pages of a popular magazine, and addressed to non-professional readers. This is an added advantage, as it can often be prescribed for patients of this class with more benefit than the more popular bromide and ergot.

Any extended discussion of the peculiar views in this little work is scarcely called for at this time. At the end of fifteen years a fifth edition is called for, and the work is still found to be useful.

A COMPEND OF ELECTRICITY AND ITS MEDICAL AND SURGICAL USES. *By* CHARLES F. MASON, M.D. *With an introduction by* CHARLES H. MAY, M.D. *12 mo. pp., xx and 108. Philadelphia:* P. BLAKISTON, SON & CO. *Chicago:* W. T. KEENER. *1887.*

This is a small book; and under the conditions imposed it cannot be entirely satisfactory, because of the great condensation. However, the chapters on "Electro-therapeutics," and "Electricity in Surgery," which are the most practical parts of the work, are very well done. The class to which this volume belongs can scarcely be commended, because, no matter how well they may be prepared, the tendency is to cultivate superficial knowledge. As quiz-compends they are good, but as manuals for the general practitioner of medicine they are not.

TRANSACTIONS OF THE THIRTY-SIXTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY. *1886.*

This volume contains 297 pages, and includes the usual lists of officers of the society, together with the addresses delivered and the reports and papers read at the meeting, May 18th and 19th, 1886. The proceedings consist almost wholly of the reports of the various standing and special committees.